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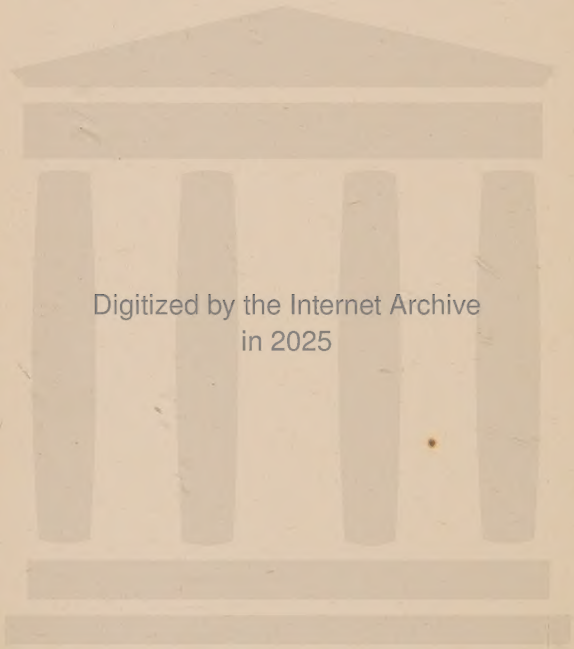

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Physiological Memory; or, The Art of Never Forgetting. . In six pamphlets.

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Assimilative Memory: or. How to Attend and Never Forget. 1 volume. The author's last and most complete work.

Criticisms on the Different Memory Systems.

Scientific Lecture on the Soul.

M. Loisette

(MARCUS DWIGHT LARROWE)

ASSIMILATIVE MEMORY

OR

HOW TO ATTEND AND NEVER FORGET

BY

PROF. A. LOISETTE

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PREFACE.

PROF. A. LOISETTE wishes to call the attention of those who are now for the first time becoming acquainted with his System of Memory Training, that he was the first teacher of a Memory System to announce and to insist that Memory is not a *separate faculty* whose office it is to carry the recollective burdens of the other faculties—but that Memory is a Physiological and Psychological property of each mental act, and that such act retains the traces and history of its own action, and that there are as many memories as there are kinds of mental action, and that, therefore, Memory is always concrete, although, for convenience sake, we do speak of it in the abstract, and that consequently all Memory improvement means *improvement of the Action* or *Manner* of action of the Mental powers, and that what he imparts is the right way to USE the Intellect and Attention—and that hence his System does make and must make better observers, clearer and more consecutive thinkers, and sounder reasoners as well as surer rememberers; that in short the fundamental principle of his System is Learn by Thinking, and that his achievements as a mind-trainer are completed when he has helped the student of his System to acquire the Habit of Attention and the Habit of Thinking on that to which he is attending on all occasions, which two Habits combined constitute the Habit of Assimilation, and that when this Habit of Assimilation is thus established in the pupil's mind, the System as such is no longer consciously used.

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ASSIMILATIVE MEMORY.

FUNDAMENTAL PRINCIPLES.

WHAT is the basic principle of my system? It is, *Learn by Thinking*. What is *Attention?* It is the will directing the activity of the *intellect* into some particular channel *and keeping it there*. It is the opposite of mind-wandering. What is thinking? It consists in *finding relations* between the objects of thought with an *immediate awareness* of those relations.

What is the Sensuous memory? It is association through the eye or ear of a *succession* of sights or sounds without any reflection or consideration of the units of the succession, or what they stand for, or represent. It is learning by *rote*—mere repetition—mere brainless or thoughtless repetition—a mode of learning that is not lasting—and always causes or promotes mind-wandering.

What is Assimilative memory? It is the *habit* of so *receiving* and *absorbing* impressions or ideas that they or their representatives shall be *ready for revival or recall whenever wanted.* It is learning through relations—by thinking—from grasping the ideas or thoughts—the meaning and the comprehension of the subject matter. This mode of learning promotes attention and prevents mind-wandering.

What are the two stages of the Memory? Let me illustrate: Last week, month, or year you saw a military procession pass along the streets. Note how your mind was affected. Into your eyes went impressions as to the

number composing the procession, their style of costume or dress, the orderliness or otherwise of their march, the shape and form of the musical instruments in the hands of the band, and the appearance of the officer in charge on horseback. Into your ears went impressions of the sound of the tramp and tread of the soldiers, the tune played by the band, and any commands uttered by the officer. These impressions commingling in your brain made up your experience of the passing of the procession—your first and only experience of it at *that* time. I call this the First Stage of the Memory—the stage of the *First Impression*, which is always the precursor of the Second Stage.

What is the Second Stage of the Memory? This moment you recall what? Not the procession itself; for it is no longer in existence. You saw and heard it then, but you do not see or hear it now. You only recall the impression left upon your mind by the procession. A ray of Consciousness is passed over that impression and you re-read it, you re-awaken the record. This is the Second Stage of the Memory—the *revival* of the previous experience—the recall to consciousness of the First Impression. The First Impression with no power to revive it afterward, gives no memory. However great the power of Revival, there is no memory unless there was a First Impression. There are three conditions of memory—(1) Impression. (2) Its Preservation. (3) Its Revival. We are mainly concerned here with the Impression and its Revival.

There are (*five*) kinds of memories rising from the natural aptitudes of different individuals—(1) First Impressions are apt to be feeble and the power to revive them weak—a poor memory. (2) First Impressions are usually weak but the power to revive them is strong—still a poor memory. (3) First Impressions are usually vivid but the power to revive them is weak—a poor memory. (4) First Impressions on all subjects are strong and the power to revive them is strong—a first-class memory. (5) First Impressions in some particulars are very strong and the reviving power in regard to them is very strong—a good memory for these particulars, or a memory good for mathe-

matics, or music, or faces, or reciting, or languages, &c., but usually weak in most other respects.

SINCE WE ARE TO LEARN BY THINKING WE MUST AT THE OUTSET LEARN THE DEFINITION OF THE THREE LAWS OF THINKING.

THREE LAWS OF MEMORY OR OF THINKING.

The first and principal thing the pupil requires to do in this lesson after learning the definition of the following Three Laws—is to be able to clearly understand the examples under each Law, and whether they verify or illustrate that Law.

I. INCLUSION indicates that there is an *overlapping* of *meaning* between two words, or that there is a *prominent idea* or *sound* that belongs to both alike, or that a similar fact or property belongs to two events or things as, to enumerate a few classes :—

WHOLE AND PART.—(Earth, Poles.) (Ship, Rudder.) (Forest, Trees.) (Air, Oxygen.) (House, Parlor.) (Clock, Pendulum.) (Knife, Blade.) (India, Punjab.) (14, 7.) (24, 12.)

GENUS AND SPECIES.—(Animal, Man.) (Plant, Thyme.) (Fish, Salmon.) (Tree, Oak.) (Game, Pheasant.) (Dog, Retriever.) (Universal Evolution, Natural Selection.) (Silver Lining, Relief of Lucknow.) (Empress Queen, Victoria.) (Money, Cash.)

ABSTRACT AND CONCRETE.—[The same Quality appears both in the Adjective and in the Substantive.]—(Dough, Soft.) (Empty, Drum.) (Lion, Strong.) (Eagle, Swift.) (Courage, Hero.) (Glass, Smoothness.) (Gold, Ductility.) (Sunshine, Light.) (Fire, Warmth.)

SIMILARITY OF SOUND.—(Emperor, Empty.) (Salvation, Salamander.) (Hallelujah, Hallucination.) (Cat, Catastrophe.) (Top, Topsy.) [Inclusion by sound is not punning.]

SIMPLE INCLUSION embraces cases not found in either of the foregoing classes, but where there is *something in common* between the pairs, as (Church, Temple.) (Pocket, Black Hole.)

II. EXCLUSION means *Antithesis.* One word excludes the other, or both words relate to one and the same thing, but occupy opposite positions in regard to it, as (Riches, Poverty.) (Hot, Cold.) (Old, Young.) (Damp, Dry.) (Life, Death.) (Love, Hate.) (Joy, Sorrow.) (Courage, Cowardice.) (Health, Sickness.) (Righteous, Wicked.) (Beauty, Ugliness.) (Peace, War.)

III. CONCURRENCE is the sequence or co-existence of impressions or ideas that have been either accidentally or causally together.—It is either the accidental conjunction of experiences or the operation of cause and effect; since even in the latter case, it is merely the sensuous facts of immediate succession that we know about, as (Gravitation, Newton, Apple.) (Dives, Lazarus, Abraham, Bosom.) (Pipe, Tobacco.) (Michaelmas, Goose.) (Columbus, America.) (Bartholomew Diaz, Cape of Good Hope.) (Grandmother, Knitting.) (Socrates, Hemlock.) (Bruce, Spider.) (Nelson, Trafalgar.) (Demosthenes, Seashore, Stammering, Pebbles.) (Job, Patience.) (Wedding, Slippers, Cake.) (Wellington, Bonaparte, Waterloo.) (Depression, Fall of Silver.) (Lightning, Thunder.)

[In the case of the following pairs, one word has been so often appropriated to the other, that there seems to be something in common in the meaning of the terms—but it is not so, they are mere cases of Concurrence, but of almost indissoluble Concurrence. For instance, a man might examine a "spade" in all its parts and might even make one after a model, and not even know what "dig" means. The mention of "dig" is as likely to make us think of pickaxe as of spade. "Spade" does not mean "dig," nor does "dig" mean spade. "Dig" merely means the *action* of the "spade," or the *use* to which it is put. Hence this pair of words does not furnish an example of Inclusion. But as "dig" is frequently appropriated to "spade"—as we have often thought of those words together—this is a case of strong Concurrence. The term "swoop" is almost

exclusively applied to "eagle." A certain action or movement of the eagle is termed swooping. But "eagle" does not mean "swoop," nor does "swoop" mean "eagle." We always think of "eagle" when we think of "swoop," but we do not often think of "swoop" when we think of "eagle." It is not In, but Con.

(Spade, Dig.) (Razor, Shaving.) (Coffin, Burial.) (Chair, Sitting.) (Scythe, Cut.) (Sword, Wound.) (Pen, Write.) (Ears, Hearing.) (Road, Travel.) (Food, Eating.) (Paper, Write.) (Wine, Drink.) (Worm, Crawl.) (Bird, Fly.) (Eagle, Swoop.) (Hawk, Hover.) (Ram, Butt.) (Teeth, Gnash.) (Wheel, Turn.)

THE BRAIN TONIC EFFECT OF THE LAWS OF MEMORY RIGHTLY APPLIED.

FIRST LAW OF MEMORY.

Building.
Dwelling. } In. by G. & S.

If we examine the *meaning* of these two words—Building and Dwelling, we find that both indicate *structures made by man.* This idea is *common* to both. Now when we find that two words express the same thought, either completely or partially, we say that it is a case of Inclusion, because the pair of words contains or includes the same idea. Inclusion is the first law of memory.

There are several kinds of Inclusion. What variety have we here? Let us see. Building applies to many kinds of structures; *house*, *stable*, *church*, *depot*, *store*, etc. It is applicable to all of these in a general way, but it designates none of them. But dwelling means a *special* kind of structure—*a building occupied by man*—a place to live in. This pair of words therefore illustrates Inclusion by Genus and Species, indicated by the abridgement, In. G. & S. or simply by In. Other examples: "Planet, Mars;" "Mountain, Vesuvius;" "River, Mississippi;" "Building Material, Potsdam Sandstone;" "Fruit, Peaches."

We may for convenience include in this class, cases of the Genus and the *Individual* as "Man and George Washington;" "Judge, Hon. John Gibson;" "New Yorker, Hon. W. W. Astor;" and cases of Species and the Individual, as, "Frenchman and Guizot;" "American, Abraham Lincoln." And also Co-equal Species under a common Genus, as under "Receiver" we may include "Can"

and "Bin"—under carnivorous birds we may include the Eagle and the Hawk. "Head-Covering, Hat, Cap;" "Hand-covering, Gloves, Mittens;" "Foot-covering, Boot, Shoe."

Dwelling. House. } Synonymous In. *Inhabitability by man* is the thought common to both of these words. Being *nearly alike* in meaning, we call them a case of Synonymous Inclusion, indicated by "Syn. In." Other cases: "Near, Close to;" "Likeness, Resemblance;" "Lift, Raise;" "Meaning, Signification;" "John, Jack;" "James, Jim;" "Elizabeth, Bessy;" "Margaret, Maggy;" "Gertrude, Gertie;" "Ellen, Nellie."

House. Parlor. } In. by Whole & Part. Another case of Inclusion. House is the whole containing as it does the *parlor, dining-room, kitchen, bedroom*, etc. Parlor is a *part* of the whole house. Hence this pair of words illustrates Inclusion by Whole & Part designated by In. W. & P., or merely by In. We may include in this class for convenience *the material and the product* as "Bureau, Oak;" "Tower, Brick;" "Harness, Leather." Other cases: "Wagon, Wheel;" "Razor, Blade;" "Table, Legs;" "United States of North America, New York." "State, County;" "City, Street;" "Bird, Feathers;" "Year, Month;" "Week, Sunday;" "Engine, Boiler;" "100, 50;" "10, 5," &c.

PARlor. PARtridge. } In. by S. & s. Here we see that there is nothing in common in the *meaning* of the words, but there is the syllable "Par" belonging to both alike. It is the same in *spelling* in both words, and virtually the same in *pronunciation*, the same by Sight and by sound, represented by In. by capital S for In. by sight, and In. by small s for In. by sound, or merely by In. Examples: "Nice, Gneiss;" "Pole, Polarity;" "Popular, Popgun;" "Jeffer*son*, Madi*son*."

Partridge. Feathers. } In. by W. & P. Partridge is the name of the bird and feathers constitute *part* of the Partridge. Other cases: "Coat, Buttons;" "Elephant,

Trunk ;" "Bottle, Neck ;" "Pen, Nib ;" "South Africa, Cape Colony."

Feathers. } In. by A. & C. **Light.** } Feathers are *things* perceived by touch and sight. They imply the quality of *lightness*, but say nothing about that quality. Light has several meanings. Here taken in connection with feathers, it means nearly destitute of weight, or the quality of lightness. It is an abstract term that describes an attribute, but feathers are things and therefore concrete. Hence the pair of words illustrate Inclusion by Abstract and Concrete, and is indicated by In. by A. and C., or merely by In. Other examples: "Sour, Vinegar;" "Sweet, Sugar;" "Coward, Fear;" "Swiftness, Express train," &c.

LIGHT. } In. by S. & s. **LIGHTerman.** } As before remarked, "Light" has several meanings. Here it means that which *enables us to see.* "Lighterman" is the man who works upon a boat called a "Lighter." There is nothing in common in the meaning of this pair of words, but the word or syllable "Light" belongs to both alike. It is In. by Sight and sound. Other cases: "Dark, Darkness;" "Starch, March;" "Rage, Forage;" "Barber, Barbarism," &c.

LighterMAN. } In by S. **Lord MANsfield.** } Here the word or syllable "man" appears in both cases. In the former it signifies the man that manages a Lighter, and in the latter it was primitively connected with Field, as "A Man's Field." After a time it became Mansfield. It is a perfect case of In. by S. and s. Other cases: "Tempest, Temperature;" "Antepenult, Antediluvians."

Lord MansFIELD. } In by S. & s. **FIELDhand.** } As "Field" belongs to both words, it is a case of perfect In. by S. and s. Other cases: "Regiment, Compliment;" "Sell, Selfish;" "Miniature, Mint," &c.

Now let the pupil read over very thoughtfully the ten words just examined, and *recall* the *relation* which we found to exist between every pair of them.

Building.
Dwelling.
House.
Parlor.
Partridge.
Feathers.
Light.
Lighterman.
Lord Mansfield.
Fieldhand.

Having finished the reading, let the pupil close the lesson, or put it out of sight and endeavour to recall the ten words from Building to Fieldhand from memory. He will find no difficulty in doing so. He learned the series by heart without any suspicion that he was committing it to memory.

Now let him realise how he did this. It was because he made use of the cementing Laws of the Memory. He sought out and found the relations between the words. By *thinking* of those relations, he *exercised* his intellect on those words in a double way—the *meaning* and the *sound* of the words were considered and then the *similarities* of meaning and of sound were noticed. A vivid *First Impression* was thus received from the words themselves and from the relations between them and an easy and certain recall thereby assured.

Now *recall* the series in an inverse order, beginning with "Fieldhand," and going back to "Building." You do it easily, because each word was cemented to its predecessor and its successor, and hence it makes no difference whether you go forward or backward. When, however, you learn by *rote* you know the task as you learned it, and not in the reverse way. Before proceeding, repeat the ten words from memory, from "Building" to "Fieldhand," and the reverse way, at least five times; each time, if possible, more rapidly than before. These repetitions are not to *learn* the series; for this has been done already, but it is to consolidate the effect of learning it in the right way.

SECOND LAW OF MEMORY.

Fieldhand. Millionnaire. } Ex. A fieldhand is a labourer who lives by the sweat of his brow, and eats not what he does not earn. A Millionnaire is at the opposite pole, and can have a superabundance of all things. It is a case of opposition. *Where two ideas pertain to one and the same idea, but occupy opposite relations in regard to it, it is a case of Exclusion.* The means of subsistence is the common idea and Fieldhand and Millionnaire occupy opposite positions in respect to that idea. Other examples: "Upper, Under;" "Above, Beneath;" "Before, After;" "Entrance, Exit;" "Appear, Vanish;" "Cheap, Dear;" "Empty, Full;" "Col. Ingersoll, Talmage;" "Washington, Arnold;" "Minnehaha, Minneboohoo."

Millionnaire. Pauper. } Ex. Here is opposition between millionnaire and pauper. It is a case of Ex. Other examples: "Superfluity, Scarcity;" "Fertile, Barren;" "Sorrow, Happiness;" "Straight, Crooked;" "Irregular, Circle;" "Prompt, Tardy;" "Liberal, Stingy;" "Wide, Narrow;" "Open, Shut;" "Inclusion, Exclusion;" "Beginning, End;" "Industry, Idleness;" "Addition, Subtraction;" "Infernal, Celestial;" "Cellar, Garret;" "Miser, Spendthrift;" "Assimilation, Learning by *rote*," &c.

Pauper. Wealth. } Ex. Here is the extreme of opposition. The state or condition of destitution of the pauper is contrasted with the state or condition of being over supplied. Other examples: "Insufficient, Enough;" "Work, Play;" "Crying, Laughing;" "Awkward, Graceful;" "In, Out;" "East, West;" "North, South;" "Saint, Sinner;" "Fast, Slow," &c.

WEALTH. CommonWEALTH. } In. by S. & s. If "Wealth" is taken as "Private" or individual, and "Commonwealth" be taken in its derivative sense, as "wealth in common," or, the "public wealth,"

then this would be a case of Exclusion. If "Wealth" is taken as the condition of great abundance, and "Commonwealth" as the political body, known as a State, then this is a case of Inclusion by sight, or by sound, the word "wealth" belonging to both alike.

COMMONwealth. / **UNcommon.** } Ex. Considering "Common" in relation with "Uncommon" we have Exclusion. In the previous pair, we used wealth of commonwealth to make a relation with the simple word wealth. Here we use the first two syllables of the word to contrast with *un*common.

Uncommon. / **Rare.** } Syn. Inclusion. These words are nearly *alike in meaning*. Other examples: "Choice, Preference;" "Resolute, Determined;" "Economical, Frugal;" "Ugly, Ill-looking;" "Insane, Mad;" "Lie, Untruth;" "Reliable, Trustworthy;" "Air, Atmosphere;" "Resident, Dweller," etc.

Rare. / **Well done.** } Ex. This pair requires careful notice. "Rare" with reference to "Uncommon" means *unusual, seldom met*, or *unfrequent;* but considered in reference to "well done," it means *partially cooked* or *underdone.* This, then, is a clear case of Exclusion. Other examples: "Men whose heads do grow beneath their shoulders, and men whose shoulders do grow beneath their heads;" "Cushion, Mule's Hoof;" "Ungoverned, Henpecked;" "Bed of Ease, Hornet's Nest;" "Waltz, Breakdown."

Well done. / **Badly done.** } Ex. A clear case of Exclusion. They are both "done," but one is done "well," and the other "badly done," or the opposite of well.

Badly done. / **Good.** } Ex. A relation is sometimes found between one word and a part of another word or phrase. Here "Bad" is the opposite of "Good."

Good. / **Good Princess.** } In. by G. & S. "Good" covers all cases, whatsoever, of its kind, but "Good Princess" is a particular kind of species of good things or

persons. Examples: "Snake, Copperhead;" "Spider, Tarantula;" "Horse, Dray horse," etc.

Now carefully read over the eleven words, and *recall* or ascertain the relations between them:

Fieldhand.
Millionnaire.
Pauper.
Wealth.
Commonwealth.
Uncommon.
Rare.
Well done.
Badly done.
Good.
Good Princess.

When you have *carefully realised the relations* between these words, lay aside the lesson and recall the entire series from memory, proceeding from Fieldhand to Good Princess, and back from Good Princess to Fieldhand. Do this five times—*each time from memory and more rapidly than before.*

Again, repeat from memory, at least five times, the series from Building to Good Princess, and back from Good Princess to Building, reciting as fast as possible each time.

THIRD AND LAST LAW OF MEMORY.

Good Princess.
Pocahontas. } In. & Con.

A proper name as such has little meaning. It is usually a mere *sound* to which the person that bears it answers as the dog responds to the name "Carlo." It is a sound which we call a name, and which we apply to one person to distinguish that person from all others, as in this case Pocahontas is used to distinguish the daughter of Powhattan from all other Indian women. She knew who was meant when that name was applied to her. But the name Pocahontas does not indicate that she was wise or unwise, learned or unlearned, tall or short, old or young. In saving the life of Capt. John Smith she became entitled to be called a "*Good* Princess.'

In this case it would be In. by G. & S. We have heard of all this, and now when we think of Pocahontas, we are apt to remember that she was a good Princess for saving Smith's life. The connection between these words I call Concurrence. We have thought of these words together, and the mind by its own operation has cemented them together, so that when we think of one it is apt to make us remember the other. *Concurrence means that which has been accidentally, or as cause and effect, conjoined in our experience.* Between the words or ideas thus conjoined, there is, strictly speaking, neither Inclusion or Exclusion. Whenever there are unrelated things which the mind holds together simply because it has occupied itself with them, then we have a case of concurrence to be represented by Con. Other examples: "Harrison, Tippecanoe;" "Columbus, America;" "Washington, Cherry Tree;" "Andrew Jackson, To the Victors belong the Spoils;" "Newton, Gravitation;" "Garfield, Guiteau;" "Gladstone, Home Rule," &c.

Pocahontas.
Capt. John Smith. } Con. We have read the story of the rescue of Smith by Pocahontas. We have *thought of these names together* and they have united in our memories by the Law of Concurrence. When we recall the name of Pocahontas, we are apt to revive also the name of Capt. John Smith and *vice versa.* Another case:—A gentleman was present at Ford's Theatre in Washington when John Wilkes Booth shot Abraham Lincoln. Just a moment before, he recognised the odour of a hyacinth held by a lady in front of him. The next moment he heard the fatal shot, and turning whence the report came, he saw the murderous result. After the lapse of a quarter of a century, he could not smell, see, or think of hyacinth without at once thinking of that scene, nor could Lincoln's assassination be mentioned in his presence without his instantly thinking of hyacinth. Nothing could have been more purely *accidental* than the quick succession of the sensation of the odour and the murder of the President. But they were *experienced together* or nearly together. They became cemented together, so that the revival of one is apt to call up the other, and this is concurrence.

Capt. John Smith. } Con.
Anvil. }

A proper name may be also used in other relations. The word, sound, or name Smith may also be a general term applicable to many classes of persons, as *coppersmith, goldsmith, silversmith,* &c. When we think of *Capt. John* Smith we use the word as a proper name. But when we think of Smith and Anvil we use the word Smith in its general sense. In either case it is an act of Concurrence. Smiths use anvils. We have thought of these words together, and that mental act has had a tendency to unite them together.

Anvil. } In. by A. & C.
Heavy. }

Anvil is a *concrete thing* that possesses the attribute heaviness ; and heavy is an abstract term that applies to heavy things, but does not state what they are. The idea or thought of heaviness is *common* to both words, and therefore it is a case of In., and as one term is concrete and the other abstract, it is a case of In. by A. & C.

Heavy. } Con.
Gravitation. }

Things are heavy that press toward the earth, in consequence of the action of gravity in their case. Gravitation, whatever that is, is what makes them tend toward the earth. We may say it is a Cause, and as we think of Cause producing Effect, and Effect as produced by Cause, such cases are *thought of together*, or almost simultaneously, and hence we have a case of Concurrence.

Gravitation. } Con.
Sir Isaac Newton. }

There is no In. or Ex. here, but Con. We have read or heard that Newton discovered the Law of Gravitation. We have exercised our minds in regard to these two words, in thinking of them together, and that is concurrence.

Sir Isaac Newton. } Con.
" Diamond." }

Newton went out of his library on one occasion, leaving his pet dog " Diamond " in the room. The dog jumped up on to the table, overturned the light, which set fire to most valuable manuscripts. They burned up. When Newton returned and discovered what his pet had done, he exclaimed, " O ! Diamond, Diamond, thou little knowest what thou hast done." The

name Diamond becomes thus vividly associated in our minds with the forbearance of the great Newton. We cannot forget it. We hold them together hereafter by Con.

Diamond. } In. by s. **Dying.** } A plain case of Inclusion by sound.

Dying. } Con. **Cholera.** } We know that cholera *causes* numerous deaths; that people die in great numbers wherever it prevails.

Cholera. } Con. **Terror.** } Concurrence includes all cases of Cause and Effect, Instrument or Means to End, Person by whom or Thing by which, &c. Cholera causes terror. Terror is the *effect* of the existence of the cholera. Now carefully read over the eleven words just considered, and think out the relations between them.

Good Princess.
Pocahontas.
Capt. John Smith.
Anvil.
Heavy.
Gravitation.
Sir Isaac Newton.
"Diamond."
Dying.
Cholera.
Terror.

Now recite them from memory at least five times forward and backward, and then recite the entire thirty words from Building to Terror, and from Terror to Building, the same number of times.

For further training, let each pupil recite the foregoing series of thirty words forward and backward two or three times per day for an entire month. He need not stop further study, but whatever else he learns let him at least practise this daily recital for one month.

REMARKS ON THE THREE LAWS.

1. Since words have different meanings, we may sometimes find that a pair of words exemplify all three Laws, as plough and sword. The relation between them may be In.,

since both of them are *cutting* instruments ; one cuts and hacks human beings and the other cuts and turns over the soil. It may be Ex., in a metaphorical sense, as one is the emblem of peace and the other of war, and it may be Con., as we have *often thought of them together* as we read in the Bible of beating swords into ploughshares.

2. Learning a series of words by heart by thinking of the *Relations* between them is wholly unlike learning it by *rote*. In the latter case, three or five words at a time or all ten words are read over from 10 to 20 times. This reading secures scarcely anything more than a *succession of sights to the eye* or *sounds to the ear*. No *study* of the words is required. The *action* of the *intellect* is not invoked. It is the *mere sensuous* impression of Eye or Ear or both together that holds the words together, and thus *many or endless* repetitions are required to memorise a series which a *conscious thoughtful use of those Laws* enables us to learn by *one painstaking* perusal.

Another way of learning such a series by *rote*, is to limit the *extent* of the repetitions. Instead of reading over the entire series or a large part of it many times, the series is slowly read over once or several times *by pairs*, only two words at a time, but the method of *acquirement* is precisely the same as in the former rote process. Let us look at this last proceeding in detail. (1) It is usually applied only where there is a *natural suggestiveness* between each pair of words. (2) But no previous study is prescribed in regard to what *constitutes* this suggestiveness, nor are the *varieties* of it set forth and required to be mastered. (3) But above all, no *study* of the *pairs of words themselves* is insisted upon. On the contrary, all such study is emphatically deprecated. The mind is not allowed to be *directed* to anything in *particular* in reading over the pairs. It must be *left* without a *rudder* or guide to float wherever it listeth. It is not to be "interfered with" by our will. What is this but intellectual dawdling? A method of Vacuity pure and simple—the exact opposite of Mental Assimilation. (4) If in reading over many times an entire series, only the ear and eye are mainly affected and the *intellect is left to wander*, much more must it wander here. In running over many words, the intellect might be arrested by chance. But here the

series consisting of two words only and all attempt to occupy or engage the intellect being purposely avoided, and nothing being done to enchain the attention to the consideration of the meaning or sounds of the two words, or the *relation* between them, the intellect wanders away from want of occupation. If when we wish to retain in our memories a paragraph of fine sentiment or lucid reasoning, we find our attention wanders, so it must wander here where only a pair of words is before it, and we are not only not furnished with any tests or guides or stimulus or motive for examining the words or for *finding the relation* between them, but on the contrary we are forbidden to interfere with the spontaneous action of the mind. The *intellect might be abolished* so far as its *participation* in such an operation is concerned. What is absorbed in such a case is absorbed intuitively and blindly. Hence we see that what is accomplished by these two processes of *rote* learning is weak impressions upon the memory and a distinct cultivation of mind wandering.

This method of *rote* learning by pairs was invented and first taught by Thomas Hallworth in New York in 1822. His method was adopted without acknowledgment by Carl Otto in Germany and Austria, and his followers in England and America.*

3. The opposite of these two methods of *rote* learning is my method, which injects an *active process* between each pair of words. Each pair of words is appraised and dovetailed by the Laws of Memory. And hence the reader can notice the *fundamental difference* between all other methods and mine. My method is to keep the mind in an *assimilating, absorbing condition when trying to learn* by making the Intellect stay with the Senses. In the process of *endless repetition* or learning by *rote* as evinced in the two methods above given, the mind is in a *passive* state. But when learning the above series by *my* method, it was kept in an *active* state. The *intellect* was directed by the will into cer-

* These followers make a great boast of learning a series of suggestive words in pairs and without interfering with the mind's action in doing so, when they are clearly indebted to Thomas Hallworth for this inadequate method, yet they never have the grace to acknowledge their indebtedness.

tain channels and kept there. It was *searching* for what was *in common* or *different* between the pairs of words. It was *noting* points of likeness and classifying them. *This is thinking.* And the most vivid *First Impressions* always result from the action of the *intellect* upon the sensuous *stimuli* from ear and eye. *Intellectual Assimilation* is a proper name for my methods.

4. The Three Laws are Forms or Modes of Mental Assimilation. But when used *consciously* for any length of time, they operate much more efficaciously than formerly—and they greatly increase the Impressionability and Revivability—as any student can affirm who faithfully carries out my instructions, and then his General Memory becomes largely improved without a conscious use of my method.

A TRAINING EXERCISE IN ATTENTION.

Whoever wishes to increase his permanent Memory power and his power of Attention must not omit to learn and practise the following exercise *precisely as I prescribe.* He will experience great satisfaction in carrying out my directions to the letter, because his conformity in this and in other respects will bring the reward of a NEW MEMORY power almost immediately. And if he were to disregard my directions, he will have no one to blame but himself.

He must write down the first two words, "Ice" and "Slippery," the latter word under the former. Let him ascertain the exact relation between these words. He will find that "Ice" is a concrete word, and "Slippery" indicates a quality of "Ice" and of other things. He places opposite the abbreviation In., by A. and C. In a similar way he proceeds to write down one word at a time, and at once ascertaining its relation to the previous word, and indicating that relation by the appropriate abbreviation. When he has analysed ten words in this painstaking manner he must recall them backward and forward from memory at least five times, and each time faster than the other.

Let him deal with the next ten in a similar manner in all respects, and then let him repeat the twenty words both ways at least five times, and so on till he has analysed,

learned and recited the entire one hundred words; and, finally, let him recite the one hundred words both ways at least once a day for thirty days, in connection with the Building Series and the Presidential Series and Series of English Sovereigns hereafter given.

As the result of this Analysis and recitals, the pupil will make these Laws of In., Ex., and Con. *operate hereafter in an unconscious manner*, with a power a hundred-fold greater than before practising this method.

Ice.	Hounds.	Hose.	Chicken.
Slippery.	Bark.	Rose.	Feathers.
Smooth.	Tree.	Bush.	Down.
Rough.	Woods.	Guerilla.	Up.
Ruffian.	Prairie.	Rill.	Upstart.
Prison.	Air.	Water-power.	Begin.
Crime.	Wind.	Manufacture.	Bee.
Crimea.	Hurricane.	Man.	Honey.
War.	Reign.	Manager.	Hives.
Army.	Governor.	Conductor.	Wives.
Navy.	Steam-engine.	Cars.	Mormon.
Ship.	Newspaper.	Track.	Brigham Young.
Sail.	Ream.	Trotting.	Old.
Auction.	Quire.	Fair.	Cold.
Bid.	Inquire.	Foul.	Winter.
Competition.	Inquest.	Chanticleer.	Summer.
Petition.	Jury.	Chandelier.	Ft. Sumter.
Signatures.	Decide.	Gas.	Stone.
Cygnet.	Cider.	Coal.	Mason.
Net.	Apple.	Mine.	Maize.
Ensnare.	Orchard.	Shaft.	Fodder.
Capture.	Charred.	Arrow.	Cattle.
Cap.	Burned.	Quiver.	Catalogue.
Gun.	Stove.	Indian.	Log.
Hunter.	Fire.	Black-Hawk.	Saw-mill.

I occasionally find that a bright, highly-gifted person makes a poor learner of my system, because he acts on hasty inferences of his own instead of attending to my long-tried and never-failing methods. To illustrate: Instead of *analysing the above series in pairs*, and *discovering* and *noting* the *relation* between each pair as I require, *he reads over the entire series.* His previous study of the Memory Laws has, however, so impressed his mind with their influence that he is able to retain this series after only two or three perusals. Or, instead of reading over the entire series, he may even *slowly read the series in pairs*,

but without analysis, without trying to ascertain and realise the exact relation between the words. This is the method of Vacuity or Dawdling formerly mentioned. But his study of the three Laws in learning the Building Series has so sharpened and quickened his appreciation of In., Ex., and Con., that he *learned the one hundred words in this wrong* way *very readily.*

But why should he not follow my directions? Why not pursue my plan and thereby acquire the *full power* of my system instead of the small portion of that power gained by disregarding my direction? On the other hand, pupils of only average natural ability are very apt to follow my directions to the letter and thereby acquire an amount of Memory Improvement which the above gifted, but non-complying pupil, seems unable to understand.

If a person is afflicted with a *very* bad memory in any or all respects, and particularly if this memory weakness is traceable to *mind-wandering*, or if it co-exist with the latter infirmity, such a person may find it best to make a series of from *one hundred to five hundred words* on the model of the foregoing series, and learn the same and *recite it daily both ways* for a month or more in addition to the prescribed exercises, and if any trace of mind-wandering remain after that, let him make and memorise another series of the same extent and practise it for the same period. The *worst cases of mind-wandering* and *of weak memories* always yield to this training treatment.

In like manner, but in much inferior degree, *the recital of what has just been heard*, such as anecdotes, narratives, contents of plays, lectures, &c., not only tends to fix the recited matter in the memory, but also to strengthen the memory generally, *provided the recital takes place* shortly after the listening, as that is like a continuation of the original experience.

TRAINING THE INTELLECT TO STAY WITH THE SENSES.

Attention is the Will directing the Intellect into some particular channel and keeping it there. There are virtually two processes involved in Attention. The Intellect is

directed into a particular channel, but to keep it there, all intruders must be excluded. To illustrate. A student attempts to learn a proposition in Geometry. To do this he must keep his mind on the printed explanations, and if his thoughts attempt to fly away, he must repress that attempt. To guide his mind into the channel of the printed exposition, he calls into play the Directory power of the attention. To prevent intruders or extruders from withdrawing his mind from the text, he exercises the Inhibitory function of the Attention.

To fully understand what takes place when trying to study, let the pupil recall that there are three sources of knowledge.

First : The Senses carry into his mind reports from the outside world—Sensation—sight of the letters, words and sentences, &c. Second : The Intellect operates on these undigested elementary Sense-reports, or Sensations, and find *relations* among them. This is Perception, or relations among Sensations. Third : The mind acts on the *perceived relations* and finds relations among them. This is Reason or relations among relations.

Now the geometrical student in reading the printed instructions to himself or in reading them aloud, might simply occupy his *eye*, or *eye and ear* with them and his Reason might soar away to other subjects, climes or ages.

Remember that the Intellect is always active and busy, and the question for us to answer in our own case is—shall it co-operate with the senses or the matter before us, or shall it wander away?

What the geometrical student requires and what we all require in such cases is to *compel the Intellect to stay with the Senses, and follow the printed train of thought.*

Interest in the subject helps to secure this co-operation. And the *Process or Method of study*, if it be an Assimilating one, also compels this co-operation. And one of the processes which is most of all effective in TRAINING the Intellect to obey the Will and thereby to stay with the Senses (where it is not a case of pure reflection), and thereby to institute and develop the Habit of the activity of the Intellect co-operating with the action of the mere senses, is practice in the use of the Laws of In., Ex., and

Con. To illustrate : In reciting the last training example of one hundred words, the Directory power is exercised and then the Inhibitory power is brought into play, and so on *alternately*. Suppose the reciter has got to "Signatures." If he does not inhibit or exclude from his mind the word "Petition" he can make no advance. If he dwells upon "Petition" he will never reach "Cygnet." But if he inhibits "Petition" his Directory power sends him on to "Cygnet," and then inhibiting "Signatures" he proceeds from "Cygnet" to "Net," &c., &c. In this most simple, elementary way he exercises and trains the Directory and Inhibitory functions to co-operate in recalling the entire Series, and notice how many distinct and separate times he has exerted the Directory function and how many times the Inhibitory function in reciting a short series. And if *he has learned* this and other Series *as I direct* and then *recites them forward and backward as long as I require*, he is sure to greatly strengthen his Attention and thereby habituate the intellect to stay with the senses and thereby help to banish mind-wandering. And when the Intellect is thus trained into the Habit of staying with the sense of sight or hearing in reading or listening, the geometrical or other student can keep his mind on the subject before him until it is mastered.

IMPORTANT CHARACTERISTICS OF ANALYSIS.

It sometimes happens that we wish to quickly learn five or twenty Proper Names, the whole or part of which are *entirely new* to us, as a list of members of a committee, a series of facts in science, &c. We can usually do this by Analysis.

Recollective Analysis, or Analysis for the purpose of helping to learn by heart, is not an originating or *manufacturing* process. It simply *finds* relation *already existing* between the words or the ideas which the words suggest or evoke. But where there is *no existing relation* between the words or ideas, it is a case for Synthesis, to be taught hereafter.

The highest Analysis relates to *objects*, or rather to the *ideas* we have of them, and the lowest to *mere words*, to

mere articulated sounds, or their written or printed representatives. The great body of examples and illustrations in my lessons pertain to ideas ; but in the list of twenty-four Presidents I deal with the proper Names as words only, as words or articulated sounds—words which are nearly devoid of meaning except as marks or sounds for naming persons, or as words containing syllables which may have a general meaning in other applications. I need scarcely add that the Laws of In., Ex., and Con. apply to words merely as well as to the ideas which are, of course, suggested by the words. Let me illustrate : Ulysses S. Grant was succeeded by Rutherford B. Hayes. The initial syllables of Ulysses and of Rutherford make an inclusion by sound. The "U" of Ulysses is pronounced as if spelled "You." We then have in effect "You" and "Ru," or "You" and "Ruth"—when we are supposed to pronounce the "u" in Ruth as a long "u ;" but if it be considered to be a short sound of "u," it is only a weak case of In. by s. But if the pupil shuts his eyes, such inclusions will not be observed. It is true that such application is not so high or grand as when they govern ideas, but it is equally *genuine*. It is only a lower stratum, but still it is a part of *terra firma*, and on no account is it to be ignored.

Ideas are never words nor are *words ever ideas*, but words become so *associated* with ideas by habit, or by the Law of Concurrence, that they *arouse certain ideas* whenever they are used. They are used as *signs* of ideas—as the means of communicating them. There is rarely, if ever, any *necessary* connection that we can discover between a particular idea and the word used to stand for it. Not only do different nations use different *words* or *sounds* to arouse the *same* thought, but different words in the same language are sometimes used to portray practically *the same idea*, as in the case of Mariner, Sailor, Seaman, Jack Tar, Navigator, Skipper, &c., &c. Nor is this all—the *same sound* may awaken different ideas, as "I" and "Eye." In the first case "I" stands for the person using it, and in the last case it means the organ of sight. To the eyesight they are obviously unlike. It may be well to remark that in imposing a name in the first place, *a reason* may exist why

that name is given, as Albus (white) was given to the mountains, now more euphoniously called Alps, because they were white or snow-crowned; but Alps does not *mean* white to the moderns. The word now merely indicates or points out the mountains so called. A word may survive and take a new meaning after its original meaning is no longer ascertainable.

The *context* helps us to know which meaning of the word was intended when the word is spoken, and the context and spelling tell the same thing when writing or print is used. Take the words "Hounds, Bark." Here Bark means the cry or yelp of the dogs. But in "Tree, Bark," the Bark of the tree is suggested. Yet the word Bark is spelled precisely the same in both cases. The word spelled "Bark" is really used to express two different things and the context generally tells which is meant in any particular case.

Individual *letters* become so strongly associated with a particular meaning that although the vocal value is exactly the same, yet the one spelling goes to one man and the other to a different man. "Spenser" would never suggest to a learned man the author of the "Philosophy of Evolution," nor would "Spencer" ever suggest the author of the "Fairie Queen." "Mr. Mil" would never mean "John Stuart Mill," although the words "Mil" and "Mill" are pronounced exactly alike. We sometimes cannot recall a Proper Name, yet we feel sure that it begins or ends with S or K or L, or that a certain other letter is in the middle of the word. We usually find that we were right. In these cases *our clue to the entire word was found in only one letter of it.*

Noticing that the *same letter is in common to two words,* although *all the other letters may be different,* is one case of Inclusion by spelling. Take an example: President John Tyler was followed by President James K. Polk. Analyse the two names—Tyler and Polk. The letter "l" alone is common to the two names. Here is one *letter* found in totally unlike contexts. If this fact is *noticed*, it cannot but help hold those two names together. The exercise of learning the names of the twenty-four Presidents is a good one for this purpose. It has a *training* value entirely apart

from its practical value in that case. And I give it for its *training* value alone.

It is infinitely better for him to learn by analysis the *order* of the Presidents than to learn that order by the only other method the pupil has heretofore known, viz., *endless repetition.* When the pupil thinks a relation may be weak, let him consider that a weak relation *thought about* is a hundred-fold stronger than *mere* repetition *without any thinking at all.* It is either *thoughtless* repetition, or *thoughtful Analysis* that he must use.

HOW TO LEARN PROPER NAMES IN A CERTAIN ORDER OF SUCCESSION.

The true way to learn such lists as those of the Popes of Rome, the Kings of England and of the American Presidents is to learn them in their places in History, as parts of the Historical order of events to which they belong, as facts in the chain of causes and effects.

Their Terms, Administrations, or Reigns are, however, used by historians as landmarks, and to follow the historians to the best advantage, it may be desirable to know the series as such, as a useful preparation for the study of the Times and age. But whatever the advantages of knowing the order of the American Presidents, I deal with it here *solely* for the *training* effect in Analysis and as an example of a method of dealing with any list of *mere* names.

The mode of dealing with this Presidential series will show how all similar Series may be handled during the period of the pupil's training. I divide the series or list of the twenty-four American Presidents into three Groups : the first Group containing *seven* names, the second having *eight* names, and the third having *nine* names. The number of names in each Group is easily remembered : 7, 8 and 9.

The first Group contains the names of

George Washington,
John Adams,
Thomas Jefferson,
James Madison,
James Monroe,
John Q. Adams,
Andrew Jackson.

If the student has mastered the previous exercises, he ought to be able to analyse this Group of names with the greatest ease. Let him try, and if he fail, then let him study my Analysis as given below. Points of Analysis that appear weak to me may be strong for him, or *vice versa*. At all events, let him if possible learn each of the three Groups by his own Analysis, looking at my work afterwards.

FIRST GROUP.

Period of Organisation and Consolidation.

George WashingTON. JOHN Adams.	In.	"Ton" and "John" make a fairly good In. by sound.
JOHN Adams. THOMas Jefferson.	In.	"John" and "Thom" (the "h" is silent in both names) make an In. by sound, imperfect but adequate if *noticed*.
Thomas JefferSON. James MadiSON.	In.	Both names terminating with the same syllable, "son," makes a clear case of In. by sound and spelling.
JAMES Madison. JAMES Monroe.	In.	This pair of names furnishes an example of perfect In. by sound and spelling in the Christian names.
James MONroe. JOHN Q. Adams.	In.	"Mon" and "John" give us a good In. by sound.
JOHN Q. Adams. Andrew JACKson.	In.	"Jack" is a nickname for John — a case of Synonymous In.

Now let the pupil repeat from memory the series from George Washington to Andrew Jackson at least five times, each time recalling and realizing how each pair of names was linked together. After this let the list be recalled

several times forward and backward, and more rapidly each time, without recalling the analysis.

REMARKS.

1. This group may well be termed the "Long-Term Group," since all of the seven Presidents except John Adams and his son, John Q. Adams, served two terms.

2. Three of the members of this group died after the close of their terms of office, on the *natal day* of the Republic, viz., John Adams and Thomas Jefferson, on the *4th of July*, 1826, and James Monroe on the *4th of July*, 1831.

3. This group also might be called the "J" group, since the initial letter of the Christian name or surname of every member of it begins with "J" or its phonetic equivalent, soft G, as *G*eorge Washington, *J*ohn Adams, Thomas *J*efferson, *J*ames Madison, *J*ames Monroe, *J*ohn Q. Adams, and Andrew *J*ackson.

SECOND GROUP.

Period of Territorial Expansion and the Growth of Internal Dissension.

ANdREW Jackson.
Martin VAN BUren. } In. Two examples of In.: "An" and "Van," and "rew" and "Bu."

Martin Van BuREN.
William HENry Harrison. } In. A good Inclusion occurs in the case of "ren" and "Hen." The name William belonged to no other of the twenty-four Presidents.

William HenRY Harrison.
John TYler. } In. A fair example of In. by Sight ["y" occurs in both names] is furnished by the syllables "ry" and "Ty."

John TyLer.
James K. PoLk. } In. & Con. The letter "l" belongs to both surnames, but there is no other letter in common. John and James is a case of Con., for both occur together many times in the New Testament.

James K. Polk. **Zachary TAYlor.**	In.	"K" is pronounced as if spelled "Kay," a good In. with "Tay."
ZachARy Taylor. **MillARd Fillmore.**	In.	The letters "ar" occur in both the Christian names.
MillARd Fillmore. **FrANklin Pierce.**	Con.	The "ar" of Millard and the "an" of Franklin is a case of Con. reversed, *i. e.*, "an" and "ar" is Con. since "n" precedes "r" in the Alphabet. Here the alphabetical order is reversed.
FrANklin Pierce. **James BuchANAN.**	In.	The "an" in Franklin is identical in spelling and in sound with the two "ans" in Buchanan.

Let the student recall the series of names from Andrew Jackson to James Buchanan several times, and at each recall let him also recall the *relation* which bound the pairs together, and then let him recall the series from Washington to Buchanan, both forward and backward, without consciously reviving the relations.

REMARKS.

1. This may be called the "Single Term Group," since none of the group served more than one term.

2. The group is notable for the fact that it is the only one in which two Presidents (William Henry Harrison and Zachary Taylor) died *natural* deaths while in office.

THIRD GROUP.

Period of Civil War and Reconstruction.

JAMes Buchanan. **AbrahAM Lincoln.**	In.	This pair of names furnishes an In. by *spelling*, not sound, "am" in both, but not pronounced alike. This must be *noticed*, as it is a weak In.

Abraham LinCOLN. Andrew JOHNson.	In.	The "l" in "coln," and the "h" in "John" are silent. It is a case of In. by sound. To the ear the sound of "Con." is like that of "Jon."
ANdrew Johnson. Ulysses S. GrANt.	In.	"An" in Andrew and in Grant has the same sound.
UlyssES S. Grant. Rutherford B. HayES.	In.	"Es" in Ulyss*es* and in Hay*es* is the same in *spelling*—but not in sound. It must be *noticed*, as it is the weakest of all. A stronger tie has heretofore been given.
Rutherford B. HAYes. James A. GarFIELD.	Con.	There is a strong association between Hay of *Hay*es and the field of Gar*field*, as in the familiar word "Hayfield."
James A. GARfield. Chester A. ARthur.	In.	In "Gar" and "Ar" there is a strong In. by sound.
Chester A. ArTHUR. GroVER Cleveland.	In.	Between "thur" and "ver" there is a clear In. by sound.
Grover ClevelANd. BenjAMin Harrison.	Con.	There is a fair In. by sound between "an" and "am;" but as they are alphabetically reversed, it makes a case of Con. reversed.
BenjAMin Harrison. Grover ClevelANd.	In. & Ex.	Here "am" and "an" occur in alphabetical order, and is a case of In., and "jam," meaning pressing together, and "cle(a)ve" meaning to separate, are opposites, hence it is also an example of Exclusion.

Let the student, as in the case of the other groups, recall this list several times, and each time revive the relation by which each pair of names was cemented together, and

after this let him recall this list several times both ways without reviving the cementing relations, and finally let him recall several times, both ways, the entire series of Presidents from Washington to Cleveland, and from Cleveland to Washington.

Remarks.

1. This group furnishes the notable fact that two Presidents (Lincoln and Garfield) were assassinated while in office.

2. Another peculiarity of this group is that, for the first time since the days of Washington, there was a widespread discussion and effort made to push the claims of a President (Grant) for a third term.

3. This group contains the name of the grandson (Benjamin Harrison) of William Henry Harrison, of the second group. The only other instance of relationship between the Presidents was in the case of John Adams and his son, John Quincy Adams of the first group.

4. This group contains the name of the only President (Andrew Johnson) who was ever sought to be impeached. The prosecution failed to convict, having lacked one vote of the number necessary for a conviction.

5. Grover Cleveland affords the first instance where the two terms of a President are separated by the full term of another President (Benjamin Harrison).

ENGLISH SOVEREIGNS.

A UNIQUE EXERCISE.

The method here used of memorising the order of the English sovereigns from William I., the Conqueror, to Victoria possesses the following novelties :—

(1) We learn the order of the entire series of thirty-seven sovereigns by means of the relations, direct and indirect, which we establish with the reigning sovereign, Victoria.

(2) The precise credit is claimed for this method which it is entitled to receive. In a list of proper names we sometimes have several surnames alike, with usually a difference of Christian names, as in the presidential series we have—*William Henry* Harrison and *Benjamin* Harrison, and *John* Adams and *John Quincy* Adams, and we also sometimes have the same Christian names prefixed to different surnames, as James *Madison* and James *Monroe*. But in the Sovereigns of England, from William I. to Victoria, we have many Christian names alike, and the differences indicated by *ordinal* numbers, as George I., George II., George III., George IV. This order of the English Kings is most extraordinary, neither the Popes of Rome, nor the French, nor any other list of kings, furnishing any parallel in more than a few incidents. It is these unique coincidences and recurrences that make it so easy to find relations between these sovereigns. This method is not applicable to the American Presidents, Prime Ministers of England, or hardly any other series.

(3) No accidental relations of parts of names is resorted to, as was done in the case of the American Presidents.

(4) The series is so taught that it can be recited for-

wards and backwards—the only true test of learning any series.

(5) The series is completely worked out and nothing is left to chance or possible mistakes so liable to be committed by novices in dealing for the first time with a new process that has to be applied to many details.

(6) When the series is carefully studied and the relations painstakingly *characterised*, it is quickly learned and it is hard to forget.

(7) When the series is learned by this method and the relations are occasionally reviewed and *identified*, its recital both ways once or twice a day for a month helps to develop the Attention as well as the Assimilative powers.

(8) The *exact name* of each Sovereign is learned. The student relies on real relations and names, and not on unidentified jingles of threes and threes and twos and twos, like three Edwards and three Henrys and two Edwards and two Henrys, with the inevitable necessity of having afterwards to learn *which* Edward and *which* Henry was meant, &c. But summations can follow specifications.

(9) Pestalozzi [1745–1827] taught that we must proceed from the "known" to the "unknown;" but this principle mainly applies to learning the words of a foreign language. When we begin to learn such words they are wholly unknown to us. But in learning ordinary series of names or prose or poetry by heart, all the names and words used may be equally well known by us; but it is mainly the *order* in which these occur that we wish to memorise, and we begin at the beginning and proceed as we learn on from the Better Known or Best Known. In the list of American Presidents the series extends back to a little more than a century; but in the case of the English Sovereigns, when we begin with the Conqueror, the series extends back to 1066—upwards of 800 years—and, although in such a series the names of all the Sovereigns may be known, yet the latest is vastly better known to us than the earliest. In such a case it may be most useful to begin with the Best Known.

(10) Fortunately in this case the Best Known Sovereign is a PIVOT around which all the other Sovereigns are directly or indirectly related. *How*, we will proceed to show.

Something of the method will be intimated by the difference of type and spaces between the names :—

William I.	Henry VII.
William II.	Henry VIII.
Henry I.	Edward VI.
Stephen.	*Mary.*
Henry II.	*Elizabeth.*
Richard I.	James I.
	Charles I.
John.	Council of State and Parliament.
Henry III.	Oliver Cromwell.
Edward I.	Richard Cromwell.
Edward II.	Council of State and Parliament.
Edward III.	Charles II.
Richard II.	James II.
	William III. and Mary.
Henry IV.	*Anne.*
Henry V.	George I.
Henry VI.	George II.
Edward IV.	George III.
Edward V.	George IV.
	William IV.
Richard III.	VICTORIA.

We begin with the Best Known, or Victoria, and we take note that she is an independent Queen, since she has never shared sovereignty with anyone; but Mary, of "William III. and Mary," was not an independent Queen, because she did share the Sovereign Power with her husband. Hereafter, when I use the word Queen I mean an independent Queen, except when Mary, of "William III. and Mary," is mentioned, and her name will be used only in connection with William III. England has had only four independent Queens, namely, Mary [Tudor], Elizabeth, Anne, and Victoria.

(I.) Victoria is the *last* queen and Mary was the *first* queen [Exclusion between *first* and *last*, or Ex.], and Mary, the *first* queen, was preceded by the *last* Edward, or Edward VI. [Ex.] And Mary, the *first* queen, was followed by the *first* and only Elizabeth [In.] And the *first* and only Elizabeth was followed by James the *First*, or I. [In.] Again, *Queen* Elizabeth was followed by *King* James, making a clear case of Ex. Again, Anne, the *third* queen, was preceded by Wm. the *Third*, or III., and Mary [In.]

And these *two* co-equal Sovereigns were preceded by James the *Second*, or II. [In., between cardinal number *two* and the ordinal number *Second*]. This series of Queens concludes with Victoria the *fourth* Queen, who was preceded by William the *Fourth*, or IV. [In.], and William the *Fourth*, or IV., was preceded by George the *Fourth*, or IV. [In.]; and George IV. by George III., and he by George II., and he by George I.,—a concurrence reversed, and William IV. was preceded, as we have seen, by William III. and Mary—and William III. by William II., and William I. at the very beginning of the series—Con.

Now let us recall in the forward and reverse order what we have learned so far. William I., William II., Edward VI., Mary, Elizabeth, James I., James II., William III. and Mary, Anne, George I., George II., George III., George IV., William IV., and Victoria, and the order reversed is Victoria, William IV., George IV., George III., George II., George I., Anne, William III. and Mary, James II., James I., Elizabeth, Mary, Edward VI., William II., William I.

(II.) Disregarding for the moment the four periods of what is usually called the Commonwealth, we see that between Elizabeth and William III. and Mary, are four monarchs, the two James and the two Charles. We have already learned that Elizabeth was followed by James I. and that William III. and Mary were preceded by James II. Hence we see that the two Charles must come *between* the two James, and, of course, that Charles I. must precede Charles II., and that the order of these four monarchs *must* be James I., Charles I., Charles II., and James II.—a plain case of Con. reversed. We saw that there were two of these four monarchs before the Commonwealth; there must then be two after it, making James I. and Charles I. before the Commonwealth and Charles II. and James II. after it.

On the day that Charles I. was executed (January 30, 1649), the Parliament (the House of Commons) abolished the kingly office and House of Lords, and appointed a Council of State of 41 members, which with the House of Commons was to be the government. Intermediate then between Charles I. and Charles II. there came—

Council of State and Parliament.
Oliver Cromwell.
Richard Cromwell.
Council of State and Parliament.

Here we see there was a Council of State and Parliament at the beginning and close of these intermediates, and between them came Oliver Cromwell and his son, Richard Cromwell. Charles I., followed by Council of State and Parliament, made a case of Exclusion and the Council of State and Parliament, followed by the Protector Oliver Cromwell, gives another example of Ex. and a case of In. between Oliver Cromwell and his son Richard, who inherited the protectorate, but a case of Ex. again between the powerful Oliver and his weak son Richard, and another example of Ex. between the protectorate of Richard Cromwell and the Council of State and Parliament, and another between the latter and the full-fledged monarchy of Charles II.

Now review what we have learned so far and we have William I., William II., Edward VI., Mary, Elizabeth, James I., Charles I., Council of State and Parliament, Oliver Cromwell, Richard Cromwell, Council of State and Parliament, Charles II., James II., William III. and Mary, Anne, George I., George II., George III., George IV., William IV., and Victoria. Reverse the recital and we have Victoria, William IV., George IV., George III., George II., George I., Anne, William III. and Mary, James II., Charles II., Council of State and Parliament, Richard Cromwell, Oliver Cromwell, Council of State and Parliament, Charles I., James I., Elizabeth, Mary, Edward VI., William II., and William I.

(III.) We now proceed to learn the eighteen kings intermediate between William II. and Edward VI. We notice at once that the *first* and *last* of these intermediates are the *first* and *last* Henrys [Ex.], viz., Henry I. and Henry VIII. We see also that Henry the *First*, or I., is followed by Henry the Second, or II. [Con.], with the *first* and only Stephen as the *first* single intermediary [In.]. Returning to Edward VI., we see that he, the *last* Edward, is preceded by Henry VIII., or the *last* Henry [In.] We also notice that Edward VI. is preceded by Henry VI., and

Henry VI. by Henry III., or the half of six [In. by W. and P.]. Finally we observe that between William II. and Mary, there are three series of kings completed—eight Henrys, six Edwards, and three Richards. Making the three Richards *reference* points we can easily fix the residue of the eighteen kings for we see that Richard I. or the *First*, is preceded by Henry II. and followed by Henry III., with the *first* and only John as the *second* single intermediary [In.] and that Richard II. is preceded by Edward I., Edward II., and Edward III., or three Edwards, and followed by Henry IV., Henry V., and Henry VI., or three Henrys, and that Richard III. is preceded by Edward IV. and Edward V., or two Edwards, and followed by Henry VII. and Henry VIII., or two Henrys.

Recalling the succession from William I. to Edward VI., we have William I., William II., Henry I., Stephen, Henry II., Richard I., John, Henry III., Edward I., Edward II., Edward III., Richard II., Henry IV., Henry V., Henry VI., Edward IV., Edward V., Richard III., Henry VII., Henry VIII., Edward VI. Reversing the order, we have Edward VI., Henry VIII., Henry VII., Richard III., Edward V., Edward IV., Henry VI., Henry V., Henry IV., Richard II., Edward III., Edward II., Edward I., Henry III., John, Richard I., Henry II., Stephen, Henry I., William II., and William I.

We conclude with the recital both ways of the thirty-seven Sovereigns from William I. to Victoria.

William I.
William II.
Henry I.
Stephen.
Henry II.
Richard I.
John.
Henry III.
Edward I.
Edward II.
Edward III.
Richard II.
Henry IV.
Henry V.
Henry VI.
Edward IV.
Edward V.
Richard III.
Henry VII.
Henry VIII.
Edward VI.
MARY.
ELIZABETH.
James I.
Charles I.
Council of State and Parliament.
Oliver Cromwell.
Richard Cromwell.
Council of State and Parliament.
Charles II.
James II.
William III. and Mary.

ANNE.	ELIZABETH.
George I.	MARY.
George II.	Edward VI.
George III.	Henry VIII.
George IV.	Henry VII.
William IV.	Richard III.
VICTORIA.	Edward V.
VICTORIA.	Edward IV.
William IV.	Henry VI.
George IV.	Henry V.
George III.	Henry IV.
George II.	Richard II.
George I.	Edward III.
ANNE.	Edward II.
William III. and Mary,	Edward I.
James II.	Henry III.
Charles II.	John.
Council of State and Parliament.	Richard I.
Richard Cromwell.	Henry II.
Oliver Cromwell.	Stephen.
Council of State and Parliament,	Henry I.
Charles I.	William II.
James I.	William I.

NUMERIC THINKING.

HOW TO NEVER FORGET FIGURES AND DATES.

When my pupils have gained the quick perception and instantaneous apprehension which always reward the studious use of In., Ex., and Con., they can, amongst other new achievements, always remember and never forget figures and dates.

Pike's Peak, the most famous in the chain known as the Rocky Mountains in America, is fourteen thousand one hundred and forty-seven feet high. Instantly, one who is trained in the use of In., Ex., and Con., perceives that there are two fourteens [Syn., In.] in these figures, and that the last figure is half of fourteen, or 7 In. by W. and P., making 14,147. Of course, one who is not practised in analogies, in discovering similarities and finding differences would not have noticed any peculiarity in these figures which would enable him to remember them. Few people ever notice any relations among numbers. But any possible figures or dates always possess relations to the mind trained in In., Ex., and Con.

Fujiyama, the noted volcano of Japan, is twelve thousand three hundred and sixty-five feet high. Does any pupil who has mastered the first lesson and who is expert in the use of In., Ex., and Con., fail to notice that here we have the disguised statement that the height of this mountain is expressed in the number of months and days of the year, 12,365 feet high? These figures drop into that mould and henceforth are remembered without difficulty. These are remarkable coincidences no doubt, but are not all sets of figures similarly impressive coincidences to the trained eye, and the *active*, *thinking* and *assimilative* mind?

No reader of English history has failed to notice the three sixes in the date of the Great Fire in London, *viz.*, 1666. The "three sixes" are generally resorted to as a signal for fire companies to turn out in full force; yet such a coincidence of figures in a distant date makes a slight impression compared to the vividness of events that happened in the year of our birth, the year of graduation from school, the year of marriage, and the year of the death of relatives, &c., &c. Keep a small blank book for such entries, not to help remember the dates or facts, but to have them together so as to rapidly deal with them, to classify them and otherwise study them under the eye. You will soon be astonished at the accumulation.

The population of New Zealand, exclusive of natives, is 672,265. Bringing the first two figures into relation with the last two we have 67 and 65—a difference of 2 only. The two groups of 672 and 265 have the figure 2 at the end of the first group, and another 2 at the beginning of the second group. These two twos are in sequence (Con.), and each of them expresses the difference between 67 and 65. *Thought* about in this way, or in any other, the series becomes fixed in mind, and will be hard to forget.

The population of Sydney is 386,400. Here are two groups of three figures each. The first two figures of the first group are 38, and the first two figures of the second group are 40—a difference of 2. Two taken from 8 leaves 6, or the third figure of the first group, and 2 added to the first figure of the second group makes 6. The 40 ends with a cypher, and it is a case of Syn. In. that the last figure of the second group or the third figure of it should likewise be a cypher. Besides, those who know anything at all about the population of Sydney must know that it is vastly more than 38,640, and hence that there must be another cypher after 40, making the total of 386,400.

The population of Melbourne is 490,912. Here we have 4 at the beginning and half of 4 or 2 at the end of the six figures. The four interior figures, viz., 9091 is a clear case of Con.—or 90 and 91. Then again 91 ending with 1, the next figure is 2—a case of sequence or Con. But 490,912 is the population of the city of Melbourne with its suburbs. The "city" itself contains only 73,301 inhabi-

1784, a double Concurrence—Lefranc de Pompignan—[pompous In. by S.], and Samuel Johnson.

General Foy, an *orator* and artillery officer, fond of literature, was born the same year [Concurrence] 1775, as the *orator* [Inclusion], Daniel O'Connell. He died in 1825, the same year [Concurrence] as Paul-Louis Courier, who was also an artillery officer [Inclusion], fond of literature [Inclusion], and moreover, like O'Connell, a violent pamphleteer [Inclusion].

Two illustrious, uncompromising characters [Inclusion], both brilliant composers [Inclusion], the one musical, the other literary, the one a representative of the music of the future, the other of the obsolete polemic of the past [Exclusion], Richard Wagner and Louis Veuillot, were born in the same year, 1813, and died in the same year, 1883. The last point is a double Concurrence.

Two foremost harbingers of modern thought [Inclusion], Voltaire and J. J. Rousseau, died in 1778—[Concurrence]. Both gained for themselves the reputation of having been the most reckless antagonists of Christianity [Inclusion]. And still the one dedicated a church to the service of God, whilst the other in his "Emile" wrote a vindication of Christianity [Exclusion as to each of them, Inclusion as to both of them].

A little practice makes the pupil prompt in dealing with any figures whatever. Take the height of Mount Everest, which is 29,002 feet. We have all heard that it is more than five miles high. Let us test this statement. There are 5,280 feet in a mile, multiply 5,280 by 5, and we have 26,400. Hence we see that Mount Everest being 29,002 feet high must be more than five miles high. Half of a mile is 5,280 feet divided by 2, or 2,640 feet. Add this to 26,400 and we have 29,040. Hence we see that Mount Everest is $5\frac{1}{2}$ miles high lacking 38 feet, or that if we add 38 feet to its height of 29,002, it would then be exactly $5\frac{1}{2}$ miles high. Can we then forget that it is exactly 29,002 feet high?

Shakespeare was born in 1564 and died in 1616. The First Folio Edition of his works was printed in 1623, the Second in 1632, the Third in 1664, and the Fourth in 1685. Can we fix these events infallibly in our memories?

We can begin with whichever date we prefer. If we add together the figures of the year of his birth, 1564, they make 16. All the dates hereafter considered occurred in 1600, &c. We can thus disregard the first 16 and consider only the last two figures which constitute the fraction of a century.

Let us begin with his death in 1616 in the *sixteens*. Is not this a vivid collocation of figures? Can we forget it as applied to the great dramatist? Now if we double the last 16, it gives us the date of the second Folio in [16]32 and 32 reversed gives us the date of the first Folio. Again, seven years after his death ["seven ages of man"] his first Folio was published in 1623. The second Folio was published in 1632 or 23 reversed, and the third Folio in 1664, or 32 doubled, and just 100 years after his birth in 1564. His birth might also be remembered as occurring in the same year as that of the great astronomer Galileo. The fourth Folio appeared in 1685 or 21 years after the third Folio. This period measures the years that bring man's majority or full age.

Attention to the facts of reading will be secured by increased power of Concentration, and a familiarity with In., Ex., and Con. will enable us to assimilate all dates and figures by numeric thinking with the greatest promptitude, especially the longer or larger series.

Try the case of Noah's Flood, 2348 B. C. Here the figures pass by a unit at a time from 2[3] to 4, and then by doubling the 4 we have the last figure 8—making altogether 2348. Another method of dealing with this date is very instructive. Read the account in Gen. ch. vii., vv. 9, 13, and 15. Now we can proceed.

They went into the Ark by *twos*. This gives the figure 2. Now let us find the other figures. Noah's three sons and their wives make three pairs of persons, or *three* families. This gives the second figure 3. Then counting Noah and his wife, and his three sons and their wives, there were four pairs of human beings altogether. This gives the figure 4. Finally the total number of human beings who entered the ark were 4 pairs or *eight* persons. This gives the figure 8. Thus we have the entire set of figures, 2348 B. C. Take the date of the creation according

to the accepted biblical chronology as 4004 B. C. We could say the date has *four* figures, that the expression of it begins and ends with the figure 4, and that the two intermediates are nought, or cyphers ; or that the figures are expressed by 40 and *forty reversed* as 40-04—or 4004.

A Scientific Experiment.

Having met several persons who claimed that they always remembered figures by reasoning about them [whatever that may have meant], and yet all such persons having shown an inability to remember many dates or numbers, I inferred that they were honestly mistaken in supposing that they could remember numbers, or else that such a method was not adapted to their idiosyncrasies. At that time, I did not suspect that their failure may have arisen from lack of *training* in In., Ex., and Con. From the circumstance that I myself could use this method with promptitude and certainty, I determined to test it in a strictly scientific way.

I made the experiment two years ago, and all my experience since has corroborated the conclusion then arrived at.

I experimented with the two groups of 20 pupils each. Neither knew any method of dealing with dates and numbers. The first group had had no training in In., Ex., and Con.; the second group had been well practised in those laws. I then gave each member of each group several very difficult cases of dates and numbers to be memorised—one example containing 24 figures. To save time and space in exposition, I have heretofore only mentioned 12 figures, or the half of the amount. All of the first group failed except one. He, however, could not memorise the 24 figures. All of the second group handled all the new examples with success, and only two of them met with much difficulty in dealing with the 24 figures.

Since this decisive experiment, I have heartily recommended the method of finding relations amongst the numbers themselves, to all who are proficient in the use of In., Ex., and Con.

The example of 24 figures must conclude this exposition.

They represent respectively the number of the day of the month in which the first Saturday in each month falls in 1895 and 1896. To one without practice in applying analysis to figures, there seems no hope of memorising this long group of figures except by endless repetition. The 24 figures are

522641637527417426415375.

Yet reflect a moment and all will be clear. Divide the 24 figures into 2 groups of 12 figures each and number the first group, divided into four sections, thus :—

(1) (2) (3) (4)

522, 641, 637, 527. Now bring the first and fourth groups into relation, and you see at once that the fourth group is larger than the first group by only *five*. Bringing the *second* group into relation with the *third* group, we find they differ only by *four*. Again : the third group is larger than the fourth by 100 and by 10, that is 527 becomes 637, the seven alone remaining steadfast. Beginning with the fourth group and passing to the third group we have the fourth group with 110 added. The second group is the third group with only four added, and the first group is the fourth group with only five subtracted. Thinking out these relations you can recall the groups as groups or the separate figures of each group or the entire 12 figures either forwards or backwards—and you have achieved this result by *Attention* and *Thought*.

The other twelve figures are easily disposed of. They are 417426415375. Divided into groups of three figures each we have

(1) (2) (3) (4)

417 426 415 375

Bringing the first group into relation with the third group, we notice that it is larger by two—and considering the second group with the fourth group, we find that the second group is as much and one more above 400 as the fourth is below 400. Other minor matters could be noticed, as that the first two figures of each group are respectively 41—42—41—37, and that the last figure in each group is 7—6—5—5. But these relations are hardly worth observing.

Coming back to the first series, we know that each figure represents the number of the day of the month to which it belongs on which the first Saturday in that month falls.

The figures for 1895 are 522—641—637—527. The first Saturday in January, 1895, falls on the *fifth* day of January, hence the second Saturday must be 5 + 7 = the 12th day of January; the third Saturday the 19th, and the fourth Saturday 26th. It is easy to know on what day of the *week* any day in January falls. Suppose you ask on what week day the 25th of January falls? You know the 26th is Saturday, and hence the 25th must be the day preceding the 26th, to wit, Friday, the 25th. Suppose you ask on what week day the 9th of January falls. You know the 12th is Saturday (the second Saturday). You now count backward thus: 12 is Saturday, 11 must be Friday, 10 Thursday, 9 must be Wednesday. The *first* Saturday in January, 1895, is the 5th; of February, the 2nd; of March, the 2nd; of April, the 6th; of May, the 4th, &c., &c. And we can tell on what week day any day of any of the other months falls.

Exercises.

1.—The Ratio of the Circumference of the circle to its diameter is expressed by the integer 3 and 708 decimals, of which I give only eight. Learning these nine figures is good practice in numeric thinking—3.14159265.

2.—The Yellowstone National Park contains 2,294,740 acres.

3.—The Monster Chartist Petition contained 3,317,702 names.

HOW TO LEARN PROSE AND POETRY BY HEART.

THE ANALYTIC SYNTHETIC METHOD APPLIED TO LONG SENTENCES.

How *unobservant* and wholly *unreliant* many pupils are may be seen from the fact that notwithstanding my elaborate handling of the processes of learning prose and poetry by heart, I often receive requests to send some indication of how I would learn a particular chapter or selection by heart! But a chapter consists of paragraphs and paragraphs of sentences. Learning the desired passages by heart is done by applying the methods here so profusely illustrated to the successive sentences of the chapter or selection, until practice and training in these methods will make their further application unnecessary.

In pursuance of my plan to keep the mind in an ASSIMILATING condition when trying to learn and to further aid in making the intellect stay and work with the senses, I proceed to furnish a Training Method for committing prose and poetry to memory.

Endless repetition or repeating a sentence to be memorised over and over again is the usual process. After one perusal, however, the mind in such a case has sated its curiosity in regard to the meaning of the sentence and each subsequent repetition for the purpose of fixing it in the memory merely makes an impression upon the eye or ear or both, and the intellect, being unoccupied, naturally wanders away. Hence, learning by *rote* promotes *mind-wandering:* for the Attention always wanders unless wooed to its work by all-engrossing interest in the subject which in case of a weak power of Attention is rarely sufficient, or by the stimulating character of the process of acquirement

which is made use of. In the Method about to be given, the intellect is agreeably occupied, and thereby a Habit of Attention is promoted.

The justification for this Method is found in the Psychological maxim that the intellect can assimilate a simple idea more easily than a complex idea, and a few ideas at a time than many ideas.

The process of this New Method of Decomposition and Recomposition is as follows :—Find the *shortest sentence or phrase that makes sense* in the sentence to be memorised. Add to this short sentence or phrase, *modifiers* found in the original sentence, always italicising each new addition—one at a time—until the original sentence is finally restored. Suppose we wish to memorise Bacon's definition of education : "*Education is the cultivation of a just and legitimate familiarity betwixt the mind and things.*" Begin with the briefest sentence and then go on : 1. Education is cultivation. 2. Education is *the* cultivation *of a familiarity.* 3. Education is the cultivation of a familiarity *betwixt the mind and things.* 4. Education is the cultivation of a *just* familiarity betwixt the mind and things. 5. Education is the cultivation of a just *and legitimate* familiarity betwixt the mind and things. In this process, the sentence is first taken to pieces, and then reconstructed. Finding the lowest terms, "Education is cultivation," we proceed step by step to add modifiers until the original sentence is fully restored.

Each time we make an addition, we recite *so much* of the original sentence as has hitherto been used, in connection with the *new modifiers* laying *special emphasis* on the new matter as represented by the italic words. The intellect is thus kept compulsorily and delightfully occupied from the start to the finish. It seeks the shortest phrase or sentence and adds successively all the modifiers, making no omissions. This analyzing and synthesizing process—*this taking to pieces and then gradually building up* the original sentence, makes a deep and lasting First Impression.

Every time this method is used the Attention ought to be strengthened and mind-wandering diminished and the Natural Memory strengthened in both its Stages.

This process admits usually of several applications in

the case of a long sentence. In the foregoing example, it might have proceeded thus: 1. Education is a familiarity. 2. Education is the familiarity *betwixt the mind and things*. 3. Education is the *cultivation* of a familiarity betwixt the mind and things. 4. Education is the cultivation of *just* familiarity betwixt the mind and things. 5. Education is the cultivation of a just *and legitimate* familiarity betwixt the mind and things. Or we might have taken this course: 1. Education is a familiarity. 2. Education is a familiarity *betwixt the mind and things*. 3. Education is a *just* familiarity betwixt the mind and things. 4. Education is a just *and legitimate* familiarity betwixt the mind and things. 5. Education is *the cultivation* of a just and legitimate familiarity betwixt the mind and things.

Another Example Fully Worked Out.

"Attention is the will directing the intellect into some particular channel and keeping it there." 1. Attention is the will. 2. Attention is the will *directing the intellect*. 3. Attention is the will directing the intellect *into a channel*. 4. Attention is the will directing the intellect into *some* channel. 5. Attention is the will directing the intellect into some *particular* channel. 6. Attention is the will directing the intellect into some particular channel *and keeping it there*. Or we may take this course: 1. Attention is directing the intellect. 2. Attention is directing the intellect *into a channel*. 3. Attention is directing the intellect into *some* channel. 4. Attention is directing the intellect into some *particular* channel. 5. Attention is directing the intellect into some particular channel *and keeping*

1. To keep the mind in an assimilating condition, what method is furnished? 2. What is the usual process of memorising prose and poetry? 3. After one perusal in such a process what takes place? 4. Does learning by rote promote mind-wandering? 5. Does not the attention always wander unless wooed to its work by great interest in the subject dealt with, or by the method of learning which is given? 6. How is the intellect occupied by using my method? 7. Is the habit of Attention also promoted? 8. Where is the justification of this method found? 9. Can the intellect assimilate a simple idea more easily than a complex idea? 10. Describe the process of learning by the Analytic Synthetic Method.

it there. 6. Attention is the *will* directing the intellect into some particular channel and keeping it there.

A Long Legal Definition.

"An estate upon condition is one which depends upon the happening or not happening of some uncertain event whereby the estate may be either originally created or enlarged or finally defeated."

1. An estate is one. 2. An estate *upon condition* is one. 3. An estate upon condition is one *which depends upon the happening of some event.* 4. An estate upon condition is one which depends upon the happening *or not happening* of some event. 5. An estate upon condition is one which depends upon the happening or not happening of some *uncertain* event. 6. An estate upon condition is one which depends upon the happening or not happening of some uncertain event *whereby the estate may be created or enlarged or defeated.* 7. An estate upon condition is one which depends upon the happening or not happening of some uncertain event whereby the estate may be *either* created or enlarged or defeated. 8. An estate upon condition is one which depends upon the happening or not happening of some uncertain event whereby the estate may be either *originally* created or enlarged or defeated. 9. An estate upon condition is one which depends upon the happening or not happening of some uncertain event whereby the estate may be either originally created or enlarged or *finally* defeated.

Moderation Advised.

The practice of the above method is so attractive to a beginner when it is applied to single sentences, that he is apt

1. In this process, what is first done with a sentence? 2. After a sentence is thus taken to pieces, what is then done with it? 3. How do we proceed after finding the lowest terms? 4. Do we revive any part of the original sentence each time we make an addition? 5. How much of it? 6. Is the intellect kept occupied in this way? 7. Does this not make a deep and lasting first impression? 8. Every time this is used what should be the result? 9. Should the natural Memory be strengthened in both stages? 10. Does this process admit of more than one application in the case of a long sentence?

to work at it too long at a time. Let him not at the outset analyse and reconstruct more than from 3 to 4 sentences at one sitting or lesson, but let him do what he attempts in the most thorough manner, and after a time he will not find it necessary to apply this method in future memorisations.

Examples for Practice.

1. A bachelor is a wild goose that tame geese envy.
2. Law is a trap baited with promise of benefit or revenge.
3. Conversation is the idle man's business and the business man's recreation.
4. Attention is adjusting the observer to the object in order to seize it in its unity and diversity.
5. Assimilative Memory is the Habit of so receiving and absorbing impressions and ideas that they or their representatives shall be ready for revival or recall whenever wanted.

INTERROGATIVE ANALYSIS USED FOR SHORT SENTENCES.

Interrogative Analysis or intellectual Inquisition is another and most effective mode of inciting the intellect to pass from a passive into an active **assimilating** condition when trying to learn by heart as well as to help create the habit of the intellect staying with the senses. The process consists of two parts : (1) *To not only ask a question on every important word in the sentence to be memorised*, but, (2) *to repeat the entire sentence in reply to each question, while specially emphasising* that word of the sentence which constitutes the *answer* to the question. Take the passage from Byron :—

"Man!
Thou pendulum 'twixt a smile and tear."

1. *Who* is a pendulum 'twixt a smile and tear? "*Man!* thou pendulum 'twixt a smile and tear." 2. What function does man perform 'twixt a smile and tear? "Man! thou

1. Define Interrogative Analysis. 2. What does it incite the intellect to do? 3. What does the process consist of? What are they?

pendulum 'twixt a smile and tear." 3. 'Twixt a tear and what else is man said to be a pendulum? "Man! thou pendulum 'twixt a *smile* and tear." 4. 'Twixt a smile and what else is man said to be a pendulum? "Man! thou pendulum 'twixt a smile *and tear*." 5. By what word is the relation between "pendulum" and "a smile and tear" described? "Man! thou pendulum '*twixt* a smile and tear." 6. Is the pendulum which man is said to be 'twixt a smile and tear addressed in the first, second, or third person? "Man! *thou* pendulum 'twixt a smile and tear."

The pupils will see that the above method is fundamentally unlike the ordinary question and answer method. In the latter procedure, a question is asked and the answer is given by "yes" or "no," or by the use of one or more words of the sentence. To illustrate: What is "man" called in this passage? Ans. A pendulum. What swings betwixt a smile and tear? Ans. A pendulum, &c., &c.

But in my Method the aim is *to repeat as much of the sentence as is possible in forming the question and the whole of it in each reply;* and in *question and reply* the *word* that *constitutes the point of both* is to be especially *emphasized*, and in this way *the mind is exercised on each word of the sentence twice* (once in question and once in answer), and *each word of the sentence is emphasized in reference to the whole of the sentence.* And in all these separate steps it is impossible for the mind to remain in a passive state, but must be *active* and *absorbing* **throughout, and thereby a most vivid first impression is secured, and the remembrance** of it assured.

Besides the habit of exhaustively considering and weighing a sentence which is created by this method, it not only secures the faithful recollection of the passages to which it is applied, but it gives another great advantage. What usually makes a person dull in conversation? Setting aside timidity, we find that well-informed persons are sometimes

1. Is this method like the ordinary question and answer method? 2. How are answers given in the latter procedure? 3. What is the aim in my method? 4. How much of the sentence is repeated in each reply given to the question? 5. What word is to be especially emphasised? 6. How often is the mind exercised on each word of the sentence? 7. In all of these separate steps, is it possible for the mind to remain in a passive state? Must it not be active and absorbing throughout?

good listeners, but no talkers. Why is this? In conversation their minds are apt to remain in a *recipient passive* state. Hence no trains of thought arise in their own minds. And having nothing in their minds which seeks utterance, they remain quiet. Now the practice of Interrogative Analysis compels such persons to interrogate—to propose questions—to think. And when such mental activity becomes strong, it will break out in conversations by interrogatories and critical and often original interesting remarks.

Teachers often complain that they can never induce some of their pupils to ask questions on their tasks. The reason is that their pupils remain in a passive state of mind. Had they been thoroughly drilled in Interrogative Analysis as I teach it, they would quickly have questions to ask on all subjects.

I show them *how* to interrogate. They cannot help practising this method. They commence with the first word of a sentence and go on to the last. And from the numerous examples I give, they see exactly how this is to be done in all other cases. But if I had merely told them to ask questions on the sentence to be learned, they would have had no guide or rule of procedure to follow. As I fully illustrate my Method the pupil at once knows how to proceed, and he gains confidence in his ability to use the method every time he tries it, and at length the Habit of active thinking has been formed, and he is almost sure to be an interrogator and thinker on all subjects.

The following sentence will be made use of as an example for practice. I deal with it by the Analytic-Synthetic, and also by the Interrogative Analysis methods.

1. What is thereby secured? 2. Is the remembrance of the first impression assured? 3. What other great advantage does the method of Interrogative Analysis give? 4. Are all well-informed persons good talkers? 5. If not, why? 6. In conversation, in what state are their minds apt to remain? 7. Do any trains of thought arise in their own minds? 8. What does the practice of Interrogative Analysis compel such persons to do? 9. What do teachers often complain of? 10. What is the cause? 11. What does my method show them? 12. Can they help practising it? 13. Do I not fully illustrate my method? 14. Does not the pupil gain confidence by practising this method? 15. Does not the habit of active thinking thereby grow upon him?

" The Devil hath not, in all his quiver's choice,
An arrow for the heart like a sweet voice ! "

1. The Devil hath an arrow. 2. The Devil hath *not* an arrow. 3. The Devil hath not an arrow *for the heart.* 4. The Devil hath not an arrow for the heart *like a voice.* 5. The Devil hath not an arrow for the heart like a *sweet* voice. 6. The Devil hath not, *in his choice*, an arrow for the heart like a sweet voice. 7. The Devil hath not, in his *quiver's* choice, an arrow for the heart like a sweet voice. 8. The Devil hath not, in *all* his quiver's choice, an arrow for the heart like a sweet voice.

THE SAME BY INTERROGATIVE ANALYSIS.

1. *Who* hath not in all his quiver's choice an arrow for the heart like a sweet voice ? The *Devil* hath not, in all his quiver's choice, an arrow for the heart like a sweet voice. 2. Hath the Devil in all his quiver's choice an arrow for the heart like a sweet voice ? The Devil hath *not*, in all his quiver's choice, an arrow for the heart like a sweet voice. 3. What hath not the Devil in all his quiver's choice for the heart ? The Devil hath not, in all his quiver's choice, *an arrow* for the heart like a sweet voice. 4. For what hath not the Devil in all his quiver's choice an arrow like a sweet voice ? The Devil hath not, in all his quiver's choice, an arrow *for the heart* like a sweet voice. 5. Like what sweet thing hath not the Devil in all his quiver's choice an arrow for the heart ? The Devil hath not, in all his quiver's choice, an arrow for the heart *like a sweet voice.* 6. Like what kind of a voice hath not the Devil in all his quiver's choice an arrow for the heart ? The Devil hath not, in all his quiver's choice, an arrow for the heart like a *sweet voice.*

" A bad workman blames his tools."

Who blames his tools ? A *bad workman* blames his tools. What kind of a workman blames his tools ? A *bad* workman blames his tools. What bad man blames his tools ? A bad *workman* blames his tools. How does a bad workman treat his tools ? A bad workman *blames* his tools. Whose tools does a bad workman blame ? A bad workman

blames *his* tools. What things belonging to a bad workman does he blame? A bad workman blames his *tools*.

"Judgments draw interest at six per cent."

What draw interest? *Judgments* draw interest at six per cent. How do judgments operate on interest? Judgments *draw* interest at six per cent. What do judgments draw? Judgments draw *interest* at six per cent. At what rate do judgments draw interest? Judgments draw interest at *six* per cent. A part of what sum is the interest of six dollars which judgments draw? Judgments draw interest at six *per cent.*

"Effort is the price of success."

What is the price of success? *Effort* is the price of success. Was effort the price of success? Effort *is* the price of success. What bearing has effort on success? Effort is *the price* of success. Effort is the price of what? Effort is the price of *success*.

"Truth seldom goes without a scratched face."

What seldom goes without a scratched face? *Truth* seldom goes without a scratched face. Does truth ever go without a scratched face? Truth *seldom* goes without a scratched face. What does truth seldom do without a scratched face? Truth seldom *goes* without a scratched face. Does truth seldom go with a scratched face? Truth seldom goes *without* a scratched face. Truth seldom goes without what? Truth seldom goes without a *scratched face*. What kind of a face is spoken of? Truth seldom goes without a *scratched* face. Without what scratched thing does truth seldom go? Truth seldom goes without a scratched *face*.

Examples for Practice.

1. Instinct is inherited memory.
2. Books are embalmed minds.
3. Words are the fortresses of thought.
4. A name denotes objects and connotes attributes.
5. Force is depersonalised will.
6. A somnambule only acts his dream.
7. Attention is fixation of consciousness.
8. Science is organised common sense.

The student of Interrogative Analysis can apply this method to the examples given under the Analytic-Synthetic Method. This will give the needful additional practice. But let him not attempt too much at any one time. Three to four examples thoroughly studied are quite sufficient for one session or sitting.

POEMS LONG OR SHORT EASILY LEARNED BY HEART.

Poe's "Bells."

1. Before attempting to memorize any selections of Prose or Poetry, never fail *first to read it carefully* to ascertain what it is all about, to learn its aim and *mode of development* and its *peculiarities*, and not least of all, to look up and note down in writing the *meaning of unfamiliar* words.

2. In this poem the average reader might have to consult the dictionary for the precise meaning of "Crystalline" [clear, unalloyed], "Runic" [old-fashioned, mystical], "Tintinnabulation" [bell-ringing], "Monody" [a monotonous sound], "Ghouls" [imaginary evil beings supposed to prey upon human bodies], and "Pæan" [a song of triumph]. The pupil should understand that except in the rare cases where mere sound helps us, we learn wholly through the *meaning* of the words and their *relations* between the meanings, and therefore if he fails to know the import of any word or words in a selection, he cannot receive the full benefit of the methods taught in this System.

3. The reader finds that there are four stanzas in this poem, each dealing with a different kind of bell, *viz.:* Silver, Golden, Brazen and Iron bells.

4. It is always best to fix in memory the order of paragraphs or of stanzas the moment the opportunity occurs for that purpose, and here, before attempting to memorise the stanzas themselves, let the order of them be fixed.

5. The order of the bells is first "silver," second "golden," third "brazen," and fourth "iron." How establish this order in mind? Silver and gold are the precious metals used for coins. They occur here in the order of

their value, "silver" being first and the cheaper, and "gold" the second and the most valuable of all. Next we have "brazen," which resembles "gold" in colour, and fourth and last we have "iron," the cheapest of the four—silver, gold, brass and iron. If this analysis of the order of the subject-matter of the stanzas is retained, the student is ready to take account of other things which his first perusal of the poem has taught him.

6. Before doing so, however, let us notice a method of the old Mnemonics, which is still taught and which should never be resorted to. It is their story-telling method. A story or narrative is invented for the purpose of helping the student, as it is claimed, to memorise it. In this poem we find there are four stanzas, each occupied with a different kind of bell. To help remember that the order of the bells is silver, gold, brass and iron, the old Mnemonics advises us to invent a story—the following will answer: A couple of lovers once took a sleigh-ride, the horses carrying *silver* bells. After a time they marry, when wedding or *golden* bells are used. Later on their house is on fire, when alarm or *brazen* bells are brought into requisition, and last of all, one of the couple dies, when the *iron* bells were tolled.

Whilst such a method is a novelty to the student, he might tolerate it as such, but as a memory-aid it is always unreliable, since it is something *in addition* to the matter to be remembered and forming no part of it, the invented story, if remembered at all, is apt to be recalled as an integral part of the selection itself.

7. In this first perusal the reader has noticed that there is a *certain uniformity of construction* in the first line of each stanza, as in the first stanza we have: "Hear the sledges with the bells—silver bells;" in the second, "Hear the mellow wedding bells—golden bells;" in the third, "Hear the loud alarum bells—brazen bells;" and in the fourth and last, "Hear the tolling of the bells—iron bells."

8. The reader has also observed that the second line in each stanza contains a reflection in the form of an exclamation on the function or result of the uses of the bells spoken of, as in the second line of the first stanza we see: "What a world of merriment their melody foretells;" in the second stanza the second line gives us, "What a world

of happiness their harmony foretells ; " the second line of the third stanza reads as follows : " What a tale of terror, now, their turbulency tells ; " and in the fourth stanza the second line runs thus : " What a world of solemn thought their monody compels."

9. Other points of resemblance [In.], or of unlikeness [Ex.], were noticed in the reader's first perusal of this poem, and these, as well as those already remarked upon, will greatly facilitate his learning the exact language of each stanza.

10. Now comes the *test.* It is often said that habit is "second" nature. The Duke of Wellington more truly said : " Habit is *ten times* nature." The reader early acquired the habit of learning prose and poetry by the *rote* method—the method of repeating the sentences over and over again almost endlessly till ear or eye retains the exact language.

Now, if the reader has gained a *clear conception* of the Analytic-Synthetic and Interrogative Analysis methods, he is sure to be convinced of their undoubted superiority to the *rote* method. And if he must needs learn Poe's " Bells" before to-morrow night, he would probably spend most of the intervening time in trying to learn it by the discredited *rote* method, and most likely fail in the attempt, while he is satisfied in theory that he could memorise it by one of my methods in three hours, or in half of that time. The difficulty in his case is to induce him to exert his will-power long enough to practise my methods in learning not a few detached sentences, but an entire poem of 50 or 200 lines ; but if he does this in one instance, he effectually breaks down the old bad habit of endless unassimilating repetition and introduces a good habit instead. He will then learn Poe's " Bells " by my methods in one-tenth, if not one-fiftieth, part of the time it would take him to do it by the *rote* method.

11. I here produce the poem in the hope that every one who studies my System will learn it by the Analytic-Synthetic method, and when he has learned the first stanza he should then glance at my Analysis of it which follows the poem and compare his work with mine. Let him then learn the rest of the poem—and thereafter, as a genuine

exercise of his *reviving* power and as a training in attention, let him recall it as often as once a week for as many weeks as his desire for improvement continues, or until the recital of it becomes merely automatic.

THE BELLS.

Hear the sledges with the bells—silver bells—
What a world of merriment their melody foretells!
How they tinkle, tinkle, tinkle, in the icy air of night!
While the stars that oversprinkle
All the heavens seem to twinkle with a crystalline delight;
Keeping time, time, time, in a sort of Runic rhyme,
To the tintinnabulation that so musically wells
From the bells, bells, bells, bells, bells, bells, bells—
From the jingling and the tinkling of the bells.

Hear the mellow wedding-bells, golden bells!
What a world of happiness their harmony foretells—
Through the balmy air of night how they ring out their delight!
From the molten-golden notes, and all in tune,
What a liquid ditty floats
To the turtle-dove that listens, while she gloats on the moon!
Oh, from out the sounding cells,
What a gush of euphony voluminously wells!
How it swells! how it dwells
On the Future! how it tells of the rapture that impels
To the swinging and the ringing of the bells, bells, bells—
Of the bells, bells, bells, bells, bells, bells, bells—
To the rhyming and the chiming of the bells!

Hear the loud alarum bells—brazen bells!
What a tale of terror, now, their turbulency tells!
In the startled ear of night
How they scream out their affright!
Too much horrified to speak,
They can only shriek, shriek, out of tune,
In a clamorous appealing to the mercy of the fire,
In a mad expostulation with the deaf and frantic fire
Leaping higher, higher, higher, with a desperate desire,
And a resolute endeavor now—now to sit or never,
By the side of the pale-faced moon. Oh, the bells, bells, bells!
What a tale their terror tells of despair!
How they clang, and clash, and roar! What a horror they outpour
On the bosom of the palpitating air!
Yet the air, it fully knows,
By the twanging and the clanging,
How the danger ebbs and flows; yet the ear distinctly tells
In the jangling and the wrangling,

How the danger sinks and swells,
By the sinking or the swelling in the anger of the bells—of the bells—
Of the bells, bells, bells, bells, bells, bells, bells—
In the clamor and the clangor of the bells!

Hear the tolling of the bells—iron bells!
What a world of solemn thought their monody compels!
In the silence of the night,
How we shiver with affright
At the melancholy menace of their tone!
For every sound that floats
From the rust within their throats is a groan.
And the people—ah, the people—
They that dwell up in the steeple, all alone!
And who tolling, tolling, tolling, in that muffled monotone,
Feel a glory in so rolling on the human heart a stone—
They are neither man nor woman—
They are neither brute nor human—they are Ghouls:
And their king it is who tolls;
And he rolls, rolls, rolls, rolls a pæan from the bells!
And his merry bosom swells with the pæan of the bells!
And he dances and he yells;
Keeping time, time, time, in a sort of Runic rhyme,
To the pæan of the bells—of the bells;
Keeping time, time, time, in a sort of Runic rhyme,
To the throbbing of the bells—of the bells, bells, bells,
To the sobbing of the bells; keeping time, time, time,
As he knells, knells, knells, in a happy Runic rhyme,
To the rolling of the bells—of the bells, bells, bells—
To the tolling of the bells, of the bells, bells, bells, bells, bells, bells—
To the moaning and the groaning of the bells.

EDGAR A. POE.

APPLICATION OF THE ANALYTIC-SYNTHETIC METHOD.

This method can be applied in several different ways according to the idiosyncrasies of different students. One way is as follows:—"Hear the sledges with the bells—silver bells." Applying this method, we have—1. Hear the sledges; 2. Hear the sledges *with the bells;* 3. Hear the sledges with the bells—*bells;* 4. Hear the sledges with the bells—*silver* bells. Or, if we use the Interrogatory Analysis Method we could proceed thus: 1. What act of the mind do we exercise in regard to the sledges with the bells—silver bells? "*Hear* the sledges with the bells—silver bells."

2. What kind of a vehicle do we hear with the bells? "Hear *the sledges* with the bells—silver bells." 3. What is it we hear in connection with the sledges? "Hear the sledges with *the bells*—silver *bells*." 4. What kind of bells do we hear? "Hear the sledges with the bells—*silver* bells."

We advance to the second line, which is a reflection on the facts stated in the first line. The two lines are thus connected through the operation of cause, or occasion. [Con.] "What a world of merriment their melody foretells." We will henceforth only use the Analytic-Synthetic Method. 1. Melody foretells. 2. *Their* melody foretells. 3. *What merriment* their melody foretells. 4. What *a world* of merriment their melody foretells. Having seen that the second line grows out of the first, and having memorised both we can recall them together thus:

1. Hear the sledges with the bells—silver bells—
2. What a world of merriment their melody fortells!

The third line runs thus: "How they tinkle, tinkle, tinkle in the icy air of night." Melody means "a succession of agreeable musical sounds." It is a general term—tinkle, tinkle, tinkle," means a species of musical sounds, the sounds of the bells. Thus we see that these two lines bear towards each other the relation of genus and species. This relation carefully noticed will tend to hold the lines together. Let us now apply our Method: 1. They tinkle. 2. They tinkle *in the night.* 3. *How* they tinkle in the night. 4. How they tinkle, *tinkle* in the night. 5. How they tinkle, tinkle, *tinkle* in the night. 6. How they tinkle, tinkle, tinkle, in the *air of* night. 7. How they tinkle. tinkle, tinkle in the *icy* air of night. Now let us recall all the lines together, thus:

1. Hear the sledges with the bells—silver bells—
2. What a world of merriment their melody foretells!
3. How they tinkle, tinkle, tinkle in the icy air of night!

The fourth line being very short had better be memorised in connection with the fifth line, and in the expression of the Analysis, we can print the first word of the fifth line with a capital letter. The two lines are:

4. While the stars that oversprinkle
5. All the heavens, seem to twinkle with a crystalline delight.

Before proceeding we may notice "night" of the third line is directly connected with "stars" of the fourth line by Concurrence. This observed relation will tend to cement the lines together. Using our Method we say: 1. Stars oversprinkle. 2. *While the* stars oversprinkle. 3. While the stars oversprinkle *the heavens*. 4. While the stars oversprinkle *All the heavens*. 5. While the stars *that* oversprinkle All the heavens. 6. While the stars that oversprinkle All the heavens *seem to twinkle*. 7. While the stars that oversprinkle All the heavens seem to twinkle *with delight*. 8. While the stars that oversprinkle All the heavens seem to twinkle with a *crystalline* delight. So far we have learned the following lines:

1. Hear the sledges with the bells—silver bells—
2. What a world of merriment their melody foretells!
3. How they tinkle, tinkle, tinkle in the icy air of night!
4. While the stars that oversprinkle
5. All the heavens, seem to twinkle with a crystalline delight.

The *sixth* line is in these words: "Keeping time, time, time, in a sort of Runic rhyme." We observe that as "time" is here repeated three times, so "tinkle" was repeated three times in the third line. We must have observed, too, that it is "stars" of the fourth line that are said to "twinkle" in the fifth line. The two lines are as closely connected as grammatical construction and the expression of thought could make them. And the sixth line is an obvious continuation of the description. Analytically we say: 1. Keeping time in a rhyme. 2. Keeping time, *time*, in a rhyme. 3. Keeping time, time, *time* in a rhyme. 4. Keeping time, time, time in a *sort* of rhyme. 5. Keeping time, time, time in a sort of *Runic* rhyme.

Let us now recall the six lines together.

1. Hear the sledges with the bells—silver bells—
2. What a world of merriment their melody foretells!
3. How they tinkle, tinkle, tinkle in the icy air of night!
4. While the stars that oversprinkle
5. All the heavens, seem to twinkle with a crystalline delight;
6. Keeping time, time, time, in a sort of Runic rhyme.

The seventh line is the continuation of the sixth. Keeping time to what? "To the tintinnabulation that so musi-

cally wells." 1 The tintinnabulation wells. 2. The tintinnabulation *that* wells. 3. The tintinnabulation that *musically* wells. 4. The tintinnabulation that *so* musically wells. 5. *To* the tintinnabulation that so musically wells. Wells from what? From the bells, bells—occurring altogether six times more. This makes the eighth line. But some pupils say at once, "I can never be sure in reciting the line to recall bells only seven times, no more or less." These pupils will admit that they can be sure to say bells *four* times, as bells, bells, bells, bells. Then, of course, they can say bells *three* times more, making seven times altogether. Here, then, we have the seventh and eighth lines, as follows:

7. To the tintinnabulation that so musically wells
8. From the bells, bells, bells, bells, bells, bells, bells—

The ninth line is—"From the jingling and the tinkling of the bells."

In the eighth line we have "bells" seven times repeated in all—bells being taken in their utmost generality, viz., *musical* action. But in the ninth or last line we have the very specific action of the bells, to wit: "From the *jingling* and the *tinkling* of the bells." We can make a short analysis, which is always better than unthinking repetition, as: 1. From the bells. 2. From the *jingling* of the bells. 3. From the jingling *and the tinkling* of the bells. The seventh, eighth, and ninth lines are as follows:

7. To the tintinnabulation that so musically wells
8. From the bells, bells, bells, bells, bells, bells—
9. From the jingling and the tinkling of the bells.

Having already learned the first six lines, we have but to preface these last three by the previous six, and we have the first stanza as follows:—

1. Hear the sledges with the bells—silver bells—
2. What a world of merriment their melody foretells!
3. How they tinkle, tinkle, tinkle in the icy air of night!
4. While the stars that oversprinkle
5. All the heavens, seem to twinkle with a crystalline delight;
6. Keeping time, time, time, in a sort of Runic rhyme,
7. To the tintinnabulation that so musically wells
8. From the bells, bells, bells, bells, bells, bells, bells—
9. From the jingling and the tinkling of the bells.

In a similar manner, the pupil can memorise the three remaining stanzas.

Having heretofore learned the order of the four different kinds of bells, and having dealt with the first or "silver" bells, we know that the next or second stanza is concerned with the "golden" bells. Similarly, when we finish the second stanza, we know that the third stanza deals with the "brazen" bells, and the last with the "iron" bells.

No further hints need be offered except perhaps in regard to the last ten lines of the last stanza.

Notice the coincidences, the resemblances, or Inclusions, the Exclusions, and the Concurrences. "Keeping time, time, time, in a sort of Runic rhyme," occurs three times —but on the third appearance of that phrase, there is a change which must be observed; for it bears this form: "Keeping time, time, time, *as he knells, knells, knells, in a happy* Runic rhyme." But the main difficulty with most students seems to be to remember *the number of times* the word "bells" is repeated in the different lines. We must keep to the text and not resort to any foreign matter to help the feeble memory. The words *pæan, throbbing, sobbing, rolling* and *tolling* occur in the lines where the "bells" are mentioned (except in that next to the last line, where "bells" occurs three times, and there is no other word in that line), and in the last line "bells" is found once, and the words "moaning" and "groaning" appear. Memorise these seven words by Analysis, to wit: pæan, throbbing, sobbing, rolling, tolling, moaning and groaning. Thus *pæan*—a song of triumph—might cause heart *throbbing*, an inward act accompanied in the present instance by *sobbing*, and this outward manifestation of grief would be intensified by the *rolling* of the bells and their *tolling*. *Moaning* and *groaning* are figurative expressions for the moaning and groaning of the mourners.

Now the figures 2, 4, 1, 4, 8, 1 (easily learned by analysis as 2, 4, 1 and 4, 8, 1, or 2, 4 with 1 following, and 4, 8 with 1 following, or 2, 4 with 1 following, and [double 2, 4] 4, 8 and 1 following) give the *number of times* the word "bells" occurs in connection with the words just learned. Opposite the line where *tolling* occurs we have marked 8, since

"bells" occurs in that line five times and three times in the next line, where no other word is found.

Keeping time, time, time, in a sort of Runic rhyme,
2. To the *pæan* of the bells—of the bells;
Keeping time, time, time, in a sort of Runic rhyme,
4. To the *throbbing* of the bells, of the bells, bells, bells,
1. To the *sobbing* of the bells; keeping time, time, time,
As he knells, knells, knells, in a happy Runic rhyme,
4. To the *rolling* of the bells, of the bells, bells, bells,
8. To the *tolling* of the bells, of the bells, bells, bells, bells,
Bells, bells, bells;
1. To the *moaning* and the *groaning* of the bells.

Carrying these suggestions to the text, they help fix the exact number of times the word "bells" occurs in each line. There are other legitimate ways to assist a poor memory to master these lines, but whatever is done let no one ever think of resorting to the unthoughtive, brainless process of endless repetition.

Poe's "Bells," being a difficult selection to learn, furnishes, as all difficult selections do, numerous opportunities for applying Analysis to fix the lines in memory. Hence it should be *mastered* and often recited by all who would learn to memorise poetry or prose, in, at the very least, *one-fifth* of the time required by the old mind-wandering process of *rote* learning.

ANALYTIC SUBSTITUTIONS.

ANOTHER METHOD FOR REMEMBERING DATES AND FIGURES.

This lesson in figures is given for the benefit of those who have not yet mastered NUMERIC THINKING. The pupil will appreciate its practical value the moment he masters the key to it.

This is given in the next few pages, and it will be found to be easy of comprehension and interesting to a surprising degree.

The whole thing is in a nutshell. Numbers, as such, are abstractions and hard to be remembered. To make them hard to forget, we translate them into words or phrases. These are easily remembered and they always instantly *give back* the figures they stand for.

We represent the figures 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0, by certain *consonants*; and then, as the vowels [a, e, i, o, u, and y, together with w] have *no numerical* value assigned to them, we turn dates or any numbers into translating *words*, which will always tell us precisely the figures the words stand for.

As this simple process enables us to remember any dates or numbers with *absolute certainty*, the pupil will be pleased to know that he can learn *how it is done* by only *one thoughtful* perusal.

The questions at the bottom of each page constitute an invaluable aid to test the accuracy of his knowledge and the correctness of his inferences.

1. Is it possible to exaggerate the importance of this lesson? 2. When will the pupil appreciate its practical value? 3. Where is this key given? 4. Are numbers hard to remember? 5. How do we make them hard to forget? 6. By what are the figures represented? 7. What letters have no numerical value assigned to them? 8. What do the questions at the bottom of each page constitute?

The nought and the nine digits are *represented* by the following *consonants* when they are *sounded* or *pronounced;* viz., 0 (nought) by s, z, or c^{soft} as in cease, 1 by t, th, or d, 2 by n, 3 by m, 4 by r, 5 by l, 6 by sh, j, ch, or g^{soft} as in the first g of George, 7 g^{hard} as in Gorge, k, c^{hard} as in *c*ane, q, or ng, 8 by f or v, and 9 by b or p.

Ample practice in translating the sounded consonants of words into figures, or of figures into the sounded consonants of words will now be given. If the reader can *remember* the foregoing consonant equivalents of figures in connection with the tabulated Figure Alphabet on the 74th page of this lesson, he can at once pass on through the book. If not, he must carefully study the intervening pages with painstaking—for when once learned, no further difficulty can arise.

The tabulated Figure Alphabet on the 74th page of this lesson expresses the consonant values of the nought and nine digits in perpendicular columns, as under nought (0) are placed *s, z,* and c^{soft}; under nine are placed *b* and *p;* under six are placed *sh, j, ch,* and g^{soft}, &c. Only those who possess first-rate natural memories can learn the equivalents of the sounded consonants in figures from this table. But when learned in this way, the pupil requires much practice in translating words into figures and figures into words. Even this exceptional pupil had better carefully study the ensuing examples.

The first thing to be done is to learn *which* consonants are used to stand for and represent the nought (0) and 1, 2, 3, 4, 5, 6, 7, 8 and 9. Let the student remember that we use vowels to make words with, but we do not give the vowels [a, e, i, o, u], or w, or y, *any number value whatever.*

WE REPRESENT THE NOUGHT OR CYPHER [0] BY THE CONSONANTS S, Z, OR c^{soft} [AS IN *cease*].

The figure value of "sew," therefore equals or is represented by a cipher [0]. S = 0, and the vowel "e" and the consonant "w" have *no figure value.* Cannot the

1. What is the first thing to be done? 2. What must the student remember in connection with vowels? 3. By what do we represent the cipher? 4. What other way is given for fixing the first rule in the mind? 5. What is meant by a "cognate"? 6. What kind of a letter is S?

student understand at once that *S*ay = o, *S*ee = o, Ea*s*e = o, I*s* = o, and *Z*oe = o, and *S*eize = oo, *S*ize = oo, *S*auce = oo ?

The following is another way of fixing in mind this first rule.

If the capital letter S were cut into two parts, and the bottom half attached to the top half, it would make a nought (0). *So it is easy to remember that S represents* 0. C[soft] as in *cease* has the same sound as S, and should therefore stand for the same figure, *viz.*, o ; and Z is a cognate of S—that is, it is *made by the same organs of speech in the same position* as when making S, only it is an undertone, and S is a whispered letter. Besides Z should represent 0 because it begins the word Zero—C[soft] should also stand for 0 for the additional reason that C[soft] begins the word cipher. *In translating a word into figures we always turn S, Z, or C[soft] into nought* (o)*; in turning figures into words we always translate a nought* (o) *into S, Z, or C[soft].*

1 IS REPRESENTED BY THE CONSONANT "T," "TH," or "D."

*T*oy = 1. As "t" stands for 1, and o and y are vowels, and have no figure value, the numerical value of Toy *must* be 1.

*Th*ee = 1, *Th*ou = 1, *D*ay = 1, *D*ew = 1, *Th*is = 10, *Th*us = 10, *D*oes = 10, *T*ies = 10, *T*oes = 10, *D*eed = 11, *D*oth = 11, *T*o-*d*ay = 11, *T*a*t*too* = 11, *T*u*t* = 11, *T*oa*d* = 11, *T*ie*d* = 11, *S*a*t* = 01, *S*ai*d* = 01, *S*ea*t* = 01, *D*ay*s* = 10, *T*oy*s* = 10, *Th*ese = 10, *Th*ose = 10.

"t" stands for 1, because it is made with *one* downward stroke. "h" has no figure value except when it is united with "s" or "c" in sh or ch, and therefore "th" *must* represent 1, and d, being the cognate of "t," it is represented by 1. Hence we translate "t," "th," and "d" by the figure 1, and when we want to represent 1, by letters, we translate it into t, th, or d.

1. In translating a word into figures, what do we always do? 2. By what letters is the figure 1 represented? 3. Why does "t" stand for 1? 4. When does the letter "h" have a figure value? 5. By what is 2 represented? 6. Why? 7. How do we represent 3? 8. Why? 9. By what consonant is 4 represented? 10. Why?

* See rules on page 72.

2 IS REPRESENTED BY "N," because it is made by two downward strokes. *N*o = 2, A*n*y = 2, O*n*e = 2, *N*oise = 20, *N*ice = 20, *N*est = 201, *N*ote = 21, *Th*en = 12, *N*un = 22, *N*an = 22, *S*on = 02, *S*ine = 02, *Z*one = 02, *N*ine = 22, *Z*eno = 02, *S*own = 02.

3 IS REPRESENTED BY "M," because the written m is made by *three* downward strokes. Ai*m* = 3, *S*u*m* = 03, *M*um = 33, *M*aim = 33, *M*oney = 32, *M*oth = 31, *M*oon = 32, *M*an = 32, *M*onth = 321, A*m*ends = 3210, *Th*in = 12, E*n*emies = 230, Ho*m*e = 3.

4 IS REPRESENTED BY "R," because it terminates the word *four* in several languages. Ai*r* = 4. A and i are vowels, and count for no figure value in Air, and hence that word represents only the figure 4. Wi*r*e = 4, *R*ow = 4, Wo*r*t = 41, W*r*ath = 41, Wo*r*th = 41, *R*ide = 41, Hei*r*s = 40, *R*uins = 420, *R*oast = 401, *R*um = 43, *R*oar = 44, *S*auce*r* = 004, *S*wo*r*dsman = 041032, *R*azors = 4040, A*r*isen = 402, He*r*mits = 4310.

5 IS REPRESENTED BY "L," because in the Roman alphabet L stood for 50, and we disregard the cipher and make it stand for 5 only—as, Oi*l* = 5. O and i, being vowels, may be *used* in a word, but having no figure value, do not change the numerical value of the word; therefore the figure value of "oi*l*" is 5, the same as though the "l" stood alone. *L*ay = 5, *L*aw = 5, Ho*l*y = 5, Awhi*l*e = 5, Whee*l* = 5, *L*it = 51, Wea*l*th = 51, *L*ad = 51, *S*o*l*o = 05, *S*a*l*es = 050, *Sl*ower = 054, *L*ane = 52, A*l*one = 52, *L*ama = 53, Ea*r*lie*r* = 454, Who*l*esa*l*e = 505, U*nmilitaryness* = 2351420.

6 IS REPRESENTED BY "SH," "J," "CH," AND "G soft." WE HAVE THE LETTER VALUES OF 6, THROUGH THE INITIAL CONSONANTS OF THE PHRASE: (Six), *Sh*y *J*ewesses *Ch*ose *G*eorge. In the following words, the vowels have no figure value, hence in translation are never counted. *Sh*ow = 6, *J*oy = 6, Ha*tch* = 6, Hu*g*e = 6, *S*a*g*e = 06, *Ch*eats = 610, *Sh*ed = 61, *Sh*eath = 61, *Sh*ot = 61, *G*in = 62, *Sh*in = 62, *J*ean = 62, *Ch*in = 62, *G*em = 63, *J*am = 63, *Sh*ame = 63, *Ch*ime = 63, U*sh*er = 64, *J*ury = 64, *Ch*air = 64, Wa*g*er = 64, *Sh*a*l*l = 65, *J*ai*l* = 65, *Ch*i*l*l = 65, *G*entle = 6215, *J*ewi*sh* = 66.

7 IS REPRESENTED BY "G hard" "K," "C hard" "Q," AND

"NG." WE FIND THE LETTER EQUIVALENTS OF 7 IN THE INITIAL CONSONANTS OF THE PHRASE: (Seven), *G*reat *K*ing *C*ame *Q*uarrell*ing*. We thus use the termination "ng" to express 7. Ho*g* = 7, *K*ey = 7, *C*ue = 7, You*ng* = 7, Yo*k*e = 7, Wi*g* = 7. As no vowels have any figure value, they cut no figure in translating into numbers. *Deck* = 17, *Desk* = 107, *Kid* = 71. *Skat*e = 071, A*sk* = 07, A*sking* = 077, *Sketch* = 076, *Squir*e = 074, *Cases* = 700, *Gat*e = 71, Ega*d* = 71, *Kit*e = 71, *Quot*e = 71. This first "*g*" is hard (7) and the second "*g*" is soft (6) in *G*anges. The "*g*" in Governor is hard and in General is soft in *G*overnor-*G*eneral. The first "*c*" is hard (7) and the second "*c*" is soft (0) in a*c*cident, = 70121, Hag*gl*e = 75, A*cm*e = 73, *Can*no*n* = 722, *G*uita*r* = 714, *Sq*uea*k* = 077.

WE REPRESENT 8 BY "F" AND "V," BECAUSE YOU CAN IMAGINE A WRITTEN "F" TO BE AN ELONGATED 8, AND "V" IS A COGNATE OF "F," hence equivalent to the same number; as, Wi*f*e = 8, Wo*v*e = 8. The vowels, although used in the words, have no figure values, neither do "w," "y," or "h," when not a part of "sh" or "ch." *Saf*e = 08, *Sav*e = 08, Ivy = 8, Hi*v*e = 8, *F*oe = 8, *Div*e = 18, E*dify* = 18, *Tiff* = 18, *Thief* = 18, *Th*ieve = 18, *Tough* = 18, E*nough* = 28, *N*avy = 28, K*n*ave = 28, *Nefarious* = 2840, *Muff* = 38, *M*ove = 38, *Ruff* = 48, *Roof* = 48, *Rough* = 48, *R*eview = 48, A*l*ive = 58, A*loof* = 58. *L*eave = 58, *Leaf* = 58, A*lph*a = 58, *Sh*eaf = 68, *Chaff* = 68, *J*ove = 68, *Sh*ave = 68, *Sh*ove = 68, *C*ave = 78, *Calf* = 78, *G*ave = 78, *Cough* = 78, *Quaff* = 78, *Quiver* = 784, *Five* = 88, *Fife* = 88, *Feoff* = 88, *Fifth* = 881, *Vivid* = 881, *Faces* = 800.

9 IS REPRESENTED BY "B" AND "P." [Nine] *B*eautiful *P*eacocks would indicate the figure value of 9, in the ini-

1. Why is 5 represented by "L"? 2. By what is 6 represented? 3. Through the initial consonants of what sentence, not considering the six in brackets? 4. Where do we find the letter equivalents of 7, not regarding the seven in brackets? 5. What termination do we also use to express 7? 6. If the termination "ng" represent 7, what is the figure value of Singing? 7. Give the figure value of Hong-kong. 8. By what two consonants do we represent 8? 9. Why? 10. Give the figure value of the vowels in these illustrations, if you find they have any value.

tial consonants of "*b*eautiful *p*eacocks." *B*ee = 9, and the two vowels "ee" have no figure value. *B*ow = 9, *P*ie = 9, *P*ew = 9, *P*ay = 9, A*p*e = 9, U*p* = 9, *B*y = 9, *B*ase = 90, *B*ias = 90, *P*ose = 90, *P*ause = 90, *B*oat = 91, *B*oth = 91, *B*ead = 91, *B*ean = 92, *B*one = 92, *P*ot = 91, *P*ath = 91, *P*ad = 91, *P*ine = 92, *B*eam = 93, *B*ar = 94, *B*ale = 95, *B*adge = 96, *B*ush = 96, *B*uff = 98, *B*aby = 99, *P*oem = 93, *P*air = 94, *P*ile = 95, *P*ush = 96, *P*age = 96, *P*uff = 98, *P*ipe = 99, *P*ope = 99, *P*ack = 97.

The representatives of the figures from 0 up to 9 are given in the initial consonants of the ten subsequent phrases following the figures :—

"*S*id*n*ey *M*er*l*ish *g*a*v*e a *b*ow" * = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Nought	(0) *S*o *Z*ealous *C*eases.	
One	(1) *T*ankard *th*is *D*ay.	
Two	(2) *N*ostrils.	(or 2 *N*ations. Ex. 35, 10 ; 37, 22.)
Three	(3) *M*eals.	(or 3 *M*ighty *M*en. 2 Sam. 23.)
Four	(4) *R*oads.	(or 4 *R*ings. Ex. 25, 26 ; 38, 5.)
Five	(5) *L*oaves.	(Matt. 14 ; Mark 6 ; Luke 9.)
Six	(6) *Sh*y *J*ewesses *Ch*ose *G*eorge.	
Seven	(7) *G*reat *K*ings *C*ame *Q*uarrel*l*i*ng*.	
Eight	(8) *F*old *V*alue.	(or 8 '*V*arsity *F*ellows.)
Nine	(9) *P*in *B*owling.	

This explanation is a help to remember the *letter-values of the figures*. Another way to fix these values in mind for permanent use is to turn *words into figures*, as in going through an ordinary spelling-book. This practice quickly enables you to *turn figures into words*, and to translate them back into figures. Facility will be attained long before the lessons are completed. But this lesson, *thoroughly* studied, will secure the needful proficiency.

1. By what two consonants is the figure value of 9 represented? 2. What are represented in the initial consonants of the ten Phrases here given, not including, of course, the words before the figures in brackets? 3. Are these sentences of any help in remembering the letter values of the figures? 4. What other way is there to fix these values in mind? 5. What does this practice enable you to do?

* Gouraud said : "*Sa*t*an* ma*y* *r*e*l*ish *co*ffee *p*ie."

RULES.

Not to be glanced at or skipped, but to be carefully studied.

1.—Two consonants of the *same kind* with no vowel between, provided they have the *same* sound, are treated as one consonant, as "ll" = 5, "nn" = 2, "rr" = 4, "dd" = 1, &c. The first two consonants have different values in the word "accident" = 70121.

2.—All *silent* consonants are *disregarded*, as "b" in "Lam*b*" = 53, "Com*b*" = 73, or in "Tom*b*" = 13. "*Ph*" and *h* in *Phth*isic" = 107; "*gh*" in Bou*gh*t = 91; "*k*" in *K*now = 2; "*gh*" in Nei*gh*bours = 2940; "*l*" in Cou*l*d = 71, or in Psa*l*m = 03.

3.—The *equivalents* of the figure-consonants have the *same value* as those consonants themselves, as "gh" in "*T*ou*gh*" = 18, "gh" in E*nough* = 28; "gh" in *R*ou*gh* = 48. "*Phr*ase" = 840, "*Ny*mph = 238, "*Lock*" = 57. "N" sometimes sounds like ng, and so represents 7, as in "Bank" (977) which *sounds* like "bang" (not "ban") with a "k" after it; ng are not always taken together as one sound and translated into 7, but when they sound separately are treated separately, as in engage = 276*. X = gs or ks = 70, as in example = 70395; in oxygen = 7062. Sometimes X = Z, as in Xerxes = 04700,

1. When will facility be attained? 2. Are these rules to be carefully studied? 3. Repeat the first rule. 4. What value is given to silent consonants? 5. What have the same value as the consonants themselves? 6. What does the consonant "N" sometimes sound like? 7. What value is assigned to it in such cases? 8. What is the consonant X equal to?

* Pupils who have a poor ear for sounds sometimes fail to note when "n" sounds like "ng" and so means 7 instead of 2. Let them study the words "ringer" (474), "linger" (5774), and "ginger" (6264). The first syllable of "linger" rhymes with the first of "ringer" and not with the first of "ginger;" it rhymes with "ring" and not with "gin;" and if the first syllable of "ringer" is 47, the first of "linger" must be 57; but the second syllable of "linger" is "ger," while the second syllable of "ringer" is only "er," So "linger" is pronounced as if spelled "ling-ger," the "n" sounds like "ng." "Ringer is pronounced "ring-er," and "ginger" as if spelled "gin-ger."

and then it = o. Ci and ti, and sometimes si and sci = sh, as gracious = 7460; Nation = 262; Conscience = 72620. Dge = j, as in Ju*dge* = 66. Tch = ch = 6, as in ditch = 16 (it rhymes with rich = 46). Ch sometimes = k, as in *Ch*ristmas = 74030. S and z sometimes = zh, which is the cognate equivalent of sh = 6, as in pleasure = 9564, and in Crozier = 7464. Acquiesce = 70, excrescence = 7074020.

4.—No notice is taken of any *vowel* or of w (war = 4) or y (yoke = 7), or of h (the = 1) except as part of ch or sh. Words like Weigh, Whey, &c., having no figure values, are never counted. If one word ends with, and the next word begins with, the *same* consonant, they are both reckoned, as That Toad = 1111.

HOW TO DEAL WITH DECIMAL FRACTIONS.

The pupil may skip the next paragraph if not wishing to deal with decimals.

[As a rule, it is better not to use words *beginning* with S, except to translate *decimals* and *fractions*, and Date-words where a *doubt* might otherwise arise (unless in a phrase like "To see Jiji," "delay a spy," &c.); and in case of the *decimals*, S, as the *initial* letter, means (not o, but) the decimal point. (1) If there is an integer followed by a decimal, two separate words are used; the decimal-word begins with S, thus: 945·51 = barley sold; 71·3412 = "good Samaritan." (2) If it is a decimal by itself, the S indicates the decimal point only; ·01 = society; ·02 = Susan; ·94 = sparrow. (3) If it is a vulgar fraction, the words translating numerator and denominator begin with

1. Do we ever take any notice of a vowel? 2. Are there any words which do not have a figure value, and if so, what are they? 3. When do we use the letter "S" in dealing with decimals? 4. When does "S" indicate the decimal point? 5. When are two separate words used? 6. In such cases, with what does the decimal word begin? 7. In case of a vulgar fraction, what words begin with "S"? 8. Are the S's then counted? 9. Which word comes first? 10. How may we deal with date-words which express the time of events before the Christian Era? 11. After?

S, and the S's are not counted, the numerator-word coming first, and the denominator-word last; thus $\frac{5}{12}$ = sell Satan.]

As to Date-words, just *before* the Christian Era you may use an initial S [or the vowel A, or any other vowel], as, Stir would mean 14 B.C. [Before Christ]; and, of course, Tower would mean 14 A.D. [for *Anno Domini*—in the year of our Lord]; Soar = 4 B.C., and Rue = 4 A.D. In a Date-word like Trial, to express 145 B.C., no doubt could arise; if the Pupil knows the contemporary history, he could not imagine it could be 290 later, or 145 A. D. If he fears he might not remember that it was B.C. he could remove all doubt by using the word Stroll, or any other word which translates 145 and begins with S.

For convenience of reference I now give the figure Alphabet tabulated.

0	1	2	3	4	5	6	7	8	9
S	t	n	m	r	l	sh	g hard	f	b
	th					j	k	v	p
Z	d					ch	c hard		
C soft						g soft	q		
							ng		

If the pupil has mastered the Figure Alphabet he will proceed with the greatest satisfaction and profit. If he has not mastered it, let him carefully review the foregoing

1. Write the Figure Alphabet from memory. 2. If the pupil has not thoroughly mastered this alphabet, what is required of him? 3. If the pupil must review the foregoing six pages, let him find words himself which spell the figures. 4. Is not such a course much better than merely to read over the examples and illustrations which I give? 5. Is it easy to find words with which to translate dates and numbers?

pages of this chapter, and then he can advance with the assurance of meeting no difficulties.

How to Find words with Which to Translate Dates and Numbers.

It is a simple and easy process ; knowing exactly what consonants are used to represent each of the numbers, you simply write at the side of the numbers to be turned into words the consonants which stand for them ; and using any vowels you please, you find out by experimenting what words can translate the figures. Suppose you wish to find out what words will translate the date of the settlement of Jamestown, Va., 1607. You place the figures under each other as below, and then you place at the right hand of each figure the consonants which translate it.

1 = t, th, d.
6 = sh, j, ch, g soft (as in gem).
0 = s, z, c soft (as in cease).
7 = g hard, k, c hard, q, and ng.

By experimenting you soon find the following phrases will represent 1607 ; as, "A *Dutch Song*," "*Dash* a *Sack*," "*To* wa*sh* a *Sock*," "*The Choosing*," "*The Chasing*," "*To*u*ches* a *K*ey," &c.

Try the date of the adoption of the Constitution of the United States, 1787. Writing down the numbers as before, you place t, th, d, opposite 1 ; g hard, k, c hard, q, ng, opposite 7 ; f and v, opposite 8 ; g hard, k, c hard, q, and ng, opposite 7 ; and then you soon find translating words, as follows: "*To give* a *K*ey," "*The giving*," "*The quaffing*," "*The Coughing*," &c.

In all cases you must carefully comply with the rules

1. What would be your method of procedure? 2. What must be done in all cases? 3. What will a little practice enable you to do? 4. What must be done to secure accuracy at first? 5. Deal with an original date in the way indicated here. 6. In dealing with the date of the foundation of Yale College, would the phrase "taxes due" express 1701? 7. If not, why? 8. Can you translate into a word or phrase the date of your own birth? 9. Translate into words or phrases the birth and death dates of some of the historic characters which you admire most. 10. Keep a record of these words or phrases for future examination.

and explanations heretofore given. A little practice will enable you to dispense with writing down the figures and the consonants which represent them; but at first pains must be taken in the above way to secure accuracy.

Try 1636, the date of the founding of Harvard College: You obtain "*Dash* a *midge*," "*The chum* age," "*Teach much*," "*To show my joy*," &c.

The founding of Yale College in 1701 gives: "*Took* a *seat*," "*The cost*," "*The quest*," "*The cast*," "A *tax due*," or "*Took* a *city*," &c.

Sometimes the first consonants only of words are used. Comenius, Educational Reformer (things before words, pictured illustrations, &c.) and Moravian Bishop, was born 1592: or (1) *Th*ings (5) We*l* (9) *P*ictured (2) *N*ow. He died 1671; or A (1) *T*eaching (6) *Ch*urchman (7) *G*ave (1) Ou*t*.

SYNTHETIC TRANSLATION OF FIGURES.

When the word or phrase used to translate figures sustains no relation of In., Ex., or Con., to the event itself, that word or phrase is synthetic and is dealt with hereafter.

Nearly all the translating words given in this section so far are synthetic. "The coughing," sustains no relation of In., Ex., or Con., to the adoption of the Constitution of the U. S., and is therefore relegated to the next chapter for the method of cementing it to that event if we were obliged to use that phrase.

Synthesis will be sometimes hereafter resorted to to connect in our minds an event to its date. When this will be necessary, the sequel will show.

ANALYTIC DATE AND NUMBER WORDS.

When the word or phrase which translates the date or number sustains the relation of In., Ex., or Con., to the event or fact itself, that word or phrase is analytic, and is memorised by merely assimilating that relation.

Different ways of expressing figures by words, phrases, or sentences that are self-connected to the fact or event will now be given.

1. SOMETIMES ALL THE SOUNDED CONSONANTS OF A WORD OR PHRASE ARE USED.

Room-mates in college are called "chums." Harvard College—the oldest Collegiate Institution in America—really introduced "the chum age" in America. The formula for the date of its foundation in 1636 my be thus expressed—Harvard College founded; *th*e *ch*u*m* a*g*e [1636].

The annual production of iron in America is said to be *six million four hundred and twenty-seven thousand, one hundred and forty-eight* tons. These figures may be analytically expressed thus: "Hu*g*e i*r*o*n* we *g*e*t* ro*ugh*" [6,427,148 tons].

The great wall of China is 1,250 miles long. This may be expressed thus: "*Th*ey *n*ow a high Wa*l*l *s*ee" [1250].

A characteristic of Herbert Spencer is the accuracy of his definitions. His birth, in 1820, may be indicated by this significant phrase: "He *Defines*" [1820].

2. SOMETIMES ONLY THE INITIAL CONSONANTS OF THE WORDS OR PHRASES OR SENTENCES ARE USED.

Caius Julius Cæsar was born 100 B.C., and he died 44 B.C. His birth may be expressed by the phrase, (1) "*Th*e (0) *S*tripling (0) *C*æsar;" and his death by a phrase which declares that his death was the remote result of his crossing the Rubicon, thus: (4) "*R*ubicon's (4) *R*evenge."

Marcus Tullius Cicero was born 106 B.C., and he died 43 B.C. His birth: (1) "*T*ullius (0) *C*icero's (6) *Ch*ildhood." His death: (4) "*R*emove (3) *M*arcus." [In allusion to the order for his death.]

The height of Egypt's greatest pyramid is 479 feet, or (4) "Wo*r*ld's (7) *G*reatest (9)*P*yramid."

The city of Melbourne was named after Lord Melbourne in 1837, or (3) "*M*elbourne (7) *Ch*ristened."

It will be convenient to consider all compound names of cities or places as if they were single words, using only the initial consonant of the first of the names, as (2) *N*ew-York, or (2) *N*ew-Amsterdam, or (2) U*n*ited-States, etc.

New York City [at first known as New Amsterdam] was settled by the Dutch in 1626, or New York founded: (1) "*D*utchmen (6) *Ch*ose (2) *N*ew-Amsterdam (6) *J*oyfully."

Virginia was settled at Jamestown in 1607. This date

may be analytically expressed thus: (1) "*Th*en (6) *J*amestown (0) Wa*s* (7) *C*olonized."

The exact population of the United States, according to the census of 1880, may be expressed through the initial consonants of the following sentence: "A (5) *L*ate (0) *C*ensus, (1) 'Eigh*t*y's' (8) *F*urnishes (9) *P*recise (2) U*n*ited-States (0) *S*overeign (9) *P*opulation," or 50,189,209.

The *exact* population of the United States declared in June, 1890, commonly called the *census of "ninety,"* was stated as *sixty-two millions six hundred and twenty-two thousand two hundred and fifty*, or "A (6) *G*eneral (2) E*n*umeration (6) whi*ch* (2) U*n*doubtedly (2) I*n*dicates (2) '*N*inety's' (5) *L*arge (0) *C*ensus." 62,622,250, or for the last three figures we could say: (2) U*n*ited States' (5) *L*arge (0) *C*ensus.

Before the close of the year 1890 an official census of the Whites and Indians on the Indian Reservations added 243,875 to the above number, making the total population of the United States in 1890, 62,866,125. A (6) *G*eneral (2) E*n*umeration (8) O*f*ficially (6) *Sh*ows (6) *J*ust (1) *Th*e (2) *N*umber (5) *L*iving. Now (1895) it is computed to be 67,000,000 [to express the round numbers of millions, we could say, (6) *J*ust (7) *G*overnment or (6) *Ch*arming (7) *C*ountry].

The birth of Herbert Spencer, in 1820, may be expressed thus: (1) A*d*vent (8) o*f* (2) I*n*fant (0) *S*pencer, or (1) *Th*e (8) *F*uture (2) "U*n*knowable" (0) *S*pencer, (2) I*n*fant (0) *S*pencer. Several different ways of expressing the *same date* will be given in a few cases.

It is often convenient for a teacher, and others, to recall the number of a page of a book in which a citation is found. In Prof. William James's Psychology Abridged for Schools and Colleges, the chapter on Habit begins on p. 134, or "(1) *Th*e (3) *M*ould (4) *R*ules;" the chapter on Will begins on p. 415: "A (4) *R*esolve (1) *D*enotes (5) Wi*ll*;" the chapter on Attention begins on p. 217, or "(2) *N*otice (1) A*t*tention's (7) *Q*ualities;" the chapter on Association begins on p. 253, or (2) "*N*ow (5) He*l*p (3) *M*emory;" and that on Memory on p. 287, or "(2) I*n*tellect (8) *F*orbids (7) *C*ramming." Prof. Loisette's New York Office is in

Fifth Avenue at No. 237, or "A (2) *N*ew (3) *M*emory (7) *G*iven," or "A (2) *N*ew (3) *M*emory (7) *A*cquired." His London Office was formerly at 37 [a *m*emory *g*ained] New Oxford Street. It is now at 200 *Regent Street, London* [(2) *N*ow (0) *S*ecure (0) *A*ssimilation].

3. SOMETIMES THE FIRST TWO CONSONANTS OF A WORD ARE USED.

Sheridan's famous ride occurred in 1864. In dates of the last and present century it is usual to indicate the last two figures of the date. 64, therefore, is all we need express. Formula: Sheridan's ride in 1864—(64) *Cheers*; or, (64) *Sher*idan. The Pennsylvania Whisky Rebellion took place in 1794; or, (94) *Br*ewery.

4. SOMETIMES THE FIRST AND LAST CONSONANTS OF A WORD ARE USED, AND SOMETIMES TWO CONSONANTS IN THE MIDDLE OF A WORD.

These devices are rarely resorted to, but if ever used, they must be thoroughly assimilated. Battle of Waterloo was fought in 1815; 15 may be found in the *t* and *l* of (15) Wa*t*er*l*oo. Herbert Spencer was born, as we have already seen, in 1820. The 20 may be found in the *n* and *c* of Spe*nc*er.

5. Never, on any account, use the same word to express two different dates; as, its first two consonants for one date and its two middle, or its first and last consonants, to express another date.

6. *Never fail to carefully analyse the relations between the fact or event and its date or number word.*

SUBJECT TO THE EXCEPTIONS HEREAFTER NAMED, ALL DATES AND NUMBERS SHOULD BE EXACTLY EXPRESSED IN THE DATE OR NUMBER WORDS.

Alexander the Great was born 356 B.C. and died in a drunken debauch 323 B.C. His birth: (3) *M*acedonia's (5) A*l*exander a (6) *Ch*ild. His death: A (3) *M*acedonian's (2) I*n*ebriation (3) *M*ortal. Several mnemonists of the old school have for the past forty years used the phrase "Rise, Sire," to express the date of the creation of the world, which according to the accepted biblical chronology took place 4004 B.C. But that phrase, proper enough in the mouths of the sons of Noah, when they found their father lying on the ground in a fit of intoxication, could have no

pertinence when applied to the Creator, to the creation in general, or to the creation of this world in particular. A self-connected phrase would, however, express this date as follows: "Creation of the World: (4) Earth (0) Started (0) Swiftly (4) Rotating."

First Exception.—From A.D. 1000 to A.D. 1700 the last three figures of the date should be expressed in the date words. *Mars* expresses 340 and could be used to indicate the invention of cannon in (1) 340 by one who knew that Mars was the name of the god of war in classic mythology. The formula would be: "Invention of cannon: (1) 340 *Mars*." But this term would have no mnemonic significance to one who knows the word Mars as meaning only one of the planets. Hence the danger—ever to be avoided—of using classical allusions in teaching the average student. A (3) martial (4) Organ (0) Sways, or murderous artillery started.

Second Exception.—From A.D. 1700 to the present moment, the last two figures must be expressed in the date words. Many examples will hereafter illustrate this exception. In very rare cases, the expression of the last figure in the date word will suffice. We know that Ralph Waldo Emerson and Oliver Wendell Holmes [author of the Autocrat of the Breakfast Table] were born towards the beginning of this century, the former in 1803 and the latter in 1809. The following formulas would give the date of their birth: Ralph Waldo (180)3 Emerson; Oliver Wendell Holmes (180)9 "Breakfast."

Third Exception.—In cases where there is no practical utility in comparing one very large number with another, as in the case of the distances of the planets from the sun, mere round numbers may suffice, yet astronomers must know such numbers with exactness. But in regard to all mundane affairs, the pupil must throw off the character of scholar and assume the license of children, if he attempts to express large numbers, as of populations, &c., by "guessing," or, what is the same thing, by only giving round numbers. The Brooklyn Suspension Bridge is 5989 feet long, and the Forth Bridge, which crosses the Firth of Forth in Scotland, is 8296 feet long. Now, instead of saying that the former is *about* 5000 feet long, why not say 5989 feet

long? [(5) *L*ong (9) *B*ridge (8) O*f* (9) *B*rooklyn.] And instead of saying that the latter is *about or somewhere in the neighbourhood* of 8000 feet long, why not be exact and say 8296 feet long? [(8) *F*orth's (2) *N*ew (9) *B*ridge (6) *Sh*own. It was completed in 1890.]

No one who has not had experience in dealing with thousands of poor memories, as I have had, can realise the fact that in most cases of poor memories *the facts themselves are often possessed*, but are mostly *unrecallable* when wanted. I have tried to teach pupils how to find analytic date or number words *without any previous training in In., Ex., and Con.*, and 99 of all such attempts have always been failures. The 100th case, which succeeded, only confirmed the rule. On the other hand, I have always found that these failures become successes after a thorough practical training in In., Ex., and Con., such as I have already given. In fact, I never had a pupil who became proficient in the use of In., Ex., and Con., who did not arrive at the use of analytic number words without any specific directions from me. But I think, on the whole, that it is the better way to *combine* direct and specific training in analytic number words, with a previous exhaustive general drill in In., Ex., and Con.

The rules hereafter given must be carefully studied and every example painstakingly examined. After studying my formulas let the pupil endeavour in *each case* to find a better one himself. If the pupil acts on my advice, he will know how to be always *sure* to think of the needful related or including facts for finding analytic date words, phrases, or sentences.

The different processes for dealing with dates or numbers may be classified as follows :—

(1) *Cases where the name of the person, fact, or event gives its date ;* as, Birth of the colored orator and politician Frederick *D*ou*g*lass (18)17. This kind of a case is of rare occurrence, and it would be like the charlatanry which has disgraced many former memory systems to allow the pupil to suppose that it frequently happens. A glance at the event, word, or description will quickly tell him if it represents the necessary figures, and if it do not, he must resort to an analytic date word, or phrase, or sentence, whichever he finds most suitable for him. No one figure alphabet con-

tains the advantages of all others. Each has special advantages in special cases. Whatever figure alphabet, however, is used, the main thing about it is to master it thoroughly.

(2) *Cases where a significant or analytic word or phrase expresses the date or number.* "*Ill*-usage" expresses the date of the death of Columbus in 1506, as he died in great neglect. The impetuous pupil says: "How can I be sure that this phrase applies to Columbus? Would it not apply to any one who had been ill-used?" Certainly not. It applies only to an ill-used man whose date (birth or death, &c.) was in 1506. If he knows of some other man who was greatly ill-used and who died in 1506, then he must use another analytic phrase for that man. See next paragraph.

Six distinguished persons were born in 1809, yet the date of the birth of each is easily fixed: Darwin, whose principal work was called "Origin of Species;" Gladstone, noted for his vigorous eloquence; Lincoln, who was conspicuous as a binder together of separated States; Tennyson, who was chosen as Poet-Laureate, and who was born at Somersby, England; Felix Mendelssohn-Bartholdy, who early displayed a musical genius, and whose first oratorio was called "St. Paul;" Elizabeth Barrett Browning [*née* Elizabeth Barrett], whose poems are distinguished for their subjectivity. The analytic formulas for these different persons born in the same year, 1809, may each differ from the others, thus:

Birth of Charles Darwin.....*Sp*ecies (18)09
———William Ewart Gladstone.....*Sp*ellbinder (18)09
———Abraham Lincoln.....*Sp*licer (18)09
———Alfred Tennyson, *P*oet (180)9 or (0) *S*elected (9) *P*oet or *S*omers*b*y (09)
———Felix Mendelssohn-*B*artholdy (180)9 or *P*recocious (180)9, or (0) *St.* (9) *P*aul
———Elizabeth *B*arret Browning (180)9, or *Sub*jective (18)09

1. Do all pupils succeed in finding analytic date or number words without any previous training in In., Ex., or Con.? 2. What proportion succeeded? 3. Does this not confirm the rule? 4. Do these failures ever become successes? 5. How? 6. What must be carefully studied hereafter? 7. After studying my formulas, what should the pupil do? 8. What will be the result, if the pupil acts on my advice? 9. In what ways may the different processes for dealing with dates and numbers be classified?

Benjamin Franklin was born in 1706, and died in 1790. (0) "*S*agacious (6) "*ch*ild" would analytically fix his birth, as he was known as a precocious boy: or the single word (06) *Sag*e. As he was a great worker all his life, (90) "*B*usy," or "(9) *B*enjamin (0) *C*eased" would significantly express his death-date.

(3) *Cases where the initial consonants of a short sentence analytically express the date.*

The analytic number words, phrases, and sentences which one retains most easily are those which he has made himself. Formulas prepared by others are perfectly retained, however, if they are thoroughly *assimilated.*

The analytic word or phrase is what one most usually finds and uses. Sentences will sometimes be useful because they may contain the name of the event, and they sometimes offer a wider range for selection of the needed consonants; but care must be taken to avoid ambiguity. To indicate the birth of Lincoln, we might use this formula: (1) *D*awn (8) o*f* (0) A*s*sassinated (9) *P*resident, but as Garfield was also assassinated, the formula in its *meaning* would equally apply to the latter. If, however, we know that Garfield was born in 1831, the ambiguity would be removed. (1) *D*awn (8) o*f* (0) A*s*sassinated (9) A*b*raham could apply only to Lincoln. (1) *D*awn (8) o*f* (0) *S*lavery's (9) *P*resident would be applicable to the career of Buchanan, Pierce and Fillmore, but it would express the birth-date only of Lincoln, while it would be wholly inapplicable to his career. (1) *D*awn (8) o*f* (0) *S*lavery's (9) *P*unisher would exclusively apply to Lincoln's life and birth-date.

(2) "*N*oah a (34) *M*e*r*e (8) Wai*f*," (2) "*N*oah (3) *M*ay (48) *R*o*v*e," or (2) "*N*oah (3) *M*ay (48) A*rr*i*v*e," are analytic sentences where *all the sounded consonants* are used. But a greater *variety* of sentences might be found, or *one* sentence be more readily found in the first instance if only the *initial* consonants are used: as, (2) *N*oah's (3) *M*enagerie (4) A*r*k (8) *F*ull, or (2) *N*oah (3) *M*ade (4) A*r*arat

1. Can you think of any other analytic words to express the date of the birth of Abraham Lincoln? 2. Since "h" has no figure value, could we not use "Shaper"? 3. If not, why? 4. What analytic number, word, phrase, or sentence, does the pupil retain best? 5. Are formulas made by others ever perfectly retained? 6. In what cases?

(8) *F*amous, or (2) *N*oah's (3) *M*arvellous (4) *R*ainy (8) *F*lood, or (2) *N*oah's (3) *M*ighty (4) A*r*k (8) *F*loated, or (2) *N*oah (3) *M*ounted (4) A*r*arat (8) *F*irmly. Other specific analytic phrases for this event may easily be found by the student.

The superiority of analytic phrases where *all* the sounded consonants are used, over the analytic sentences, where only the initial consonants are employed, may be seen in the case of the number of men who enlisted in behalf of the Federal Government in the late war. The number was *two millions, three hundred and twenty thousand, eight hundred and fifty-four.* By initial consonants we have, (2) A*n*y (3) *M*an (2) *n*ow (0) *i*s (8) a *f*ull (5) *l*oyal (4) He*r*o. By all the sounded consonants we have—"I*n*hu*m*a*n* Ci*v*il Wa*r*;" the latter shorter, more significant, and more easily remembered. And, on the principle that a condensed, brief statement, if clear and definite, makes a more vivid impression than a longer one, we shall find that a short analytic phrase is better for the memory than an analytic sentence, and an analytic single word than a phrase. But a short analytic phrase, or a short analytic sentence, is usually necessary, owing to our ignorance of the subject matter, the limitations which belong to all figure alphabets, and our neglect to act strictly on the lines of In., Ex., and Con.

(4) *Cases where there is no direct relation between the person, fact, or event, and the date, or number word or words.* In such cases, Synthesis, which is taught hereafter, develops an *indirect* relation. Synthesis is used in three cases: (1) Where there is no relation *existing* between the fact or event and its date word; (2) Where *we are ignorant* of all the facts which would give us significant or analytic date-words; and (3) where we know the needful pertinent facts with which analytic words could be formed, but we cannot

1. Is the analytic word or phrase self-connected to the event? 2. Why will sentences sometimes be useful? 3. What must be avoided? 4. Can a greater variety of sentences be found if only the initial consonants are used? 5. What does the phrase "Inhuman Civil War" represent? 6. What does it show the superiority of? 7. What are the characteristics which recommend it? 8. Is a short analytic phrase better for the memory than an analytic sentence? 9. On what principle?

recall them for use. In these three cases Synthesis must be used. I will now give and illustrate the rules for the prompt finding of *analytic date or number words.*

The *preparation* for thus remembering numbers without effort is the only exertion required. When the method is mastered, the *application* of it is made with the greatest ease and pleasure.

There are four indispensable requisites to finding analytic date and number words promptly.

(1) SUCH A MASTERY OF THE FIGURE ALPHABET THAT THE CONSONANT EQUIVALENTS OF THE CIPHER AND NINE DIGITS ARE AT INSTANT COMMAND, AND NEVER HAVE TO BE LOOKED UP WHEN YOU HAVE TO DEAL WITH FIGURES.

Pumps were invented in 1425. A student who thinks 2 is to be translated by "m" instead of "n," translates the dates by these phrases, *viz.*, "Drum a whale," or "Trim oil," or "To ram a wall." As these phrases sustain the relation neither of In., Ex., or Con. to the fact, they are hard to be remembered; and if remembered, they mislead. The student who has mastered the Fig. Alphabet remembers that "n" stands for 2, and if he knows the object of pumps, he at once finds the analytic phrase, "Drain a well." The formula would be: "The pump invented—*Dr*ai*n* a we*l*l (1425)," or (1) Wa*t*er (4) *r*aised (2) i*n* a (5) ho*l*low. How could he forget the date?

Tea was first used in Europe in 1601. The unobserving student imagines that 6 is translated by g^{hard}, k, c^{hard}, q, or ng, and so he translates 1601 into "Ou*tcast*" (1701); a mistake of 100 years, and, besides, "Outcast" is wholly unconnected with the introduction of tea into Europe. The genuine student knows that 6 is represented by sh, j, ch, or g^{soft}, and so he at once finds the analytic formula: "Tea first introduced into Europe—*T*ea *chest* (1601)." The figure phrase bears the relation of In. and Con. to the event, and cannot be forgotten. Besides many people

1. What is sometimes necessary? 2. In how many cases is Synthesis used? 3. What are they? 4. How many indispensable requisites are there to finding analytic date and number words promptly? 5. Is draining a well the sole object of a pump? 6. Was such its purpose originally? 7. Explain the two phrases used to fix the date of the introduction of tea into Europe. 8. Can a figure phrase that bears the relation of In., Ex., or Con. to the event be forgotten?

believe that tea helps digestion, and such persons would find an analytic date-word thus : "Tea first used in Europe —*Digest* (1601)."

"C^{soft}" is often mistaken for "c^{hard}" by careless learners. Fulton's steamboat "Clermont" was launched in 1807. Such a pupil translates that date by the phrase, "*Defies* ice" (1800). Here "c" is soft and represents a cipher and not 7. "*Defy* a *scow*" gives the exact date. Here the "c" is hard and represents 7, and as the steamboat could easily outrun the "scow," the phrase is easily remembered.

An impatient pupil who never learns anything thoroughly often disregards the rule about *silent* consonants. Braddock and most of his men were killed by the Indians in 1755. This date this pupil translates by the phrase, "Dock knell all" (17255). He overlooks the fact that 17 was expressed by "Dock," and no one out of a mad-house can tell how he came to add "knell all," unless he had forgotten that he had provided for the 7 of 17, and imagined that "k" in knell is sounded. But how account for "n" to introduce 2? A genuine pupil would find the analytic phrase in "*The kill all*" [1755].

Andrew Jackson, the seventh President, died in 1845. The unindustrious pupil imagines that "p" represents 8, and not "f" or "v," and translates 1845 into "*To pour oil*" (1945). The diligent student finds an analytic translation of the date in the phrase "*The farewell*" (1845).

These illustrations are sufficient to convince any one that the Figure Alphabet must be *mastered* before the attempt is made to deal with dates and numbers.

(2) THE PUPIL MUST POSSESS SUCH A MASTERY OF THE SUBJECT MATTER THAT HE CAN INSTANTLY RECALL FACTS RELATING THERETO ON THE LINES OF IN., EX., AND CON. If he lacks such knowledge he had better deal

1. What mistake does the impatient pupil make? 2. Does this not convince you that the figure alphabet must be mastered before the attempt is made to deal with dates? 3. What is the second requisite to becoming proficient in forming analytic date words? 4. What should the pupil do if he lacks the knowledge indicated here? 5. If the pupil fixes in mind the population of three States per day, how long will it take him to learn the population of all the American States? 6. How long to deal in like manner with the population of all the countries of the globe?

with dates and numbers which he must remember by synthesis [hereafter], or by Numeric Thinking, rather than strive in vain to find *analytic* date and number words.

It is said that there are 1,750 spoken languages. If the pupil does not know that the tongue is moved in different ways to pronounce the distinctive sounds of different languages, he might not think of this analytic translation of (1750), "*Tong*ue a*l*l way*s*."

The population of Kentucky according to the last census (1880) was 1,648,690. Those who do not know the Kentuckians raise fine saddle and race horses, many of which are bays, might not think of the analytic phrases, "*Tea*c*her* o*f sh*owy *bays*," or "*Tea*c*her o*f a *sh*owy *pace*."

The estimated number of horses in the world is 58,576,-322. Those who do not know how cruelly coachmen often treat the horses under their charge might not think of the analytic phrase, "Wi*l*l *fee*l *coachmen n*ow."

The Yellowstone National Park contains 2,294,740 acres. One who does not know that this park was recently created, might not think of the analytic phrase, "O*ne N*ew *Park* a*rose*."

The U. S. Government paid out in the year 1865 the sum of $1,297,555,324. If one wished to remember the exact figures, he could easily find an analytic phrase, if he thinks of the act of delivering or handing over the money, as "*Th*ey u*npack l*oya*l*ly a*l*l *mon*ey he*re*." If any analytic phrase is long or awkwardly constructed, it is very easy to memorise it by the analytic-synthetic method; as (1) They unpack. (2) They unpack *money*. (3) They unpack money *here*. (4) They unpack *all* money here. (5) They unpack loyally all money here.

The number of letters delivered in Great Britain during the postal year of 1881-82 was 1,280,636,200. If the student knows that the Central Post Office of London is a very large building, he could instantly find the analytic phrase, "Wi*thin* o*ffice* hu*ge* *much n*ew*s* we *see*."

The amount lost annually by fire in the United States is estimated at $112,853,784. If we do not go outside of the subject matter of losses by fire, we shall readily find an analytic phrase by means of which we can certainly

remember that large number of dollars—"A *debt* o*n flam*ing *fire*."

There are 653,020 Freemasons in U. S. A. Those who know what is meant by the phrase, "From labor to refreshment," in the masonic ritual, will at once translate those figures into the analytic phrase, "*Jol*ly *Ma*sons."

There are 591,800 Odd Fellows in the United States. Notice if you can find figures to translate "Odd" or "Fellows," or any other fact pertaining to the Order, and you have the analytic phrase, "A*l*l ha*p*py '*Od*d' *faces*."

There have been granted 428,212 patents in the United States. Can you find any word pertaining to patents in those figures? "We he*re* i*nvent* a*n*ew."

The number of Indians in the United States is estimated as 241,329. Considering how unkindly treated many of them have been, we find an analytic phrase which fits the fact—"*No red man* ha*p*py."

The population of the state of New York in 1880 was five millions, eighty-two thousand, eight hundred and seventy-one (5,082,871). An analytic phrase founded on any conspicuous characteristic of the population, or on any prominent aspect of the geography of the State [Niagara Falls, for instance], which many of its people have witnessed, would suffice, or "A (5) *L*egal (0) *C*ensus (8) O*f* (2) *N*ew-York's (8) *F*olks (7) *C*omprising (1) Eigh*t*y's."

The pupil who conscientiously studies the rules and examples in this lesson will find that he can have the great satisfaction of always being exact and reliable in regard to numbers.

1. Give an original analytic phrase expressing the number of acres in Yellowstone National Park. 2. Why do we not give all three of the l's in the word "loyally" a figure value? 3. In translating the word "debt," why is it not 191 instead of 11? 4. What makes these phrases easy to remember? 5. Give an analytic phrase expressing the number of patents granted in the United States. 6. What great satisfaction can the conscientious pupil always have? 7. Suppose, when the pupil reaches this page, he has learned that the number of the population, or of patents, or of Masons, Odd Fellows, &c., has changed, what is he to do? 8. Must he not deal with the latest statement of the fact, and find his own analytic number words?

DATES OF THE ACCESSION OF THE AMERICAN PRESIDENTS.

The date-words opposite each name can be learned by *one* careful analytic perusal. If the relation is not understood in any case, a glance at the explanations which follow the series of Presidents will remove all doubt or difficulty.

*George Washington	*Fa*bian (1789).
John Adams	*Bick*erings (1797).
*Thomas Jefferson	*St*eed (1801).
*James Madison	*Sp*eculative (1809).
*James Monroe	*Do*ctrine (1817).
John Q. Adams	U*nl*ucky (1825).
*Andrew Jackson	U*nwh*ipped (1829).
Martin Van Buren	*Mock*ed (1837).
†William Henry Harrison	Ha*rd* cider (1841).
John Tyler	*Rud*derless (1841).
James K. Polk	*Realm*-extender (1845).
†Zachary Taylor	War*p*roof (1849).
Millard Fillmore	*Lic*enser (1850).
Franklin Pierce	*Loom*ing (1853).
James Buchanan	*Lec*ompton (1857).
*Abraham Lincoln	Agi*t*ation (1861).
Andrew Johnson	*Shal*l (1865).
*Ulysses S. Grant	*Chap*ultepec (1869).
Rutherford B. Hayes	*Coc*oa (1877).
†James A. Garfield	*Fat*al (1881).
Chester A. Arthur	A*ft*er (1881).
Grover Cleveland	*Fl*ood (1885).
Benjamin Harrison	*Fib*rous (1889).
Grover Cleveland	*Boom* (1893).

1. How can the date-words opposite each name be learned? 2. What must be done in case the relation is not understood? 3. What is the relation between William Henry Harrison and "Hard cider"? 4. Why would not "Sweet cider" do? 5. What Presidents served more than one term? 6. How is this indicated? 7. How many died in office? 8. When is the pupil supposed to learn the series of Presidents?

* Those who were in office more than four years were re-elected for a second term. The second term always began four years after the beginning of the first term.

† Those who were Presidents for less than four years died in office and were succeeded by Vice-Presidents. President Lincoln was murdered forty days after the commencement of his second term of office, when Vice-President Johnson became the 17th President.

REMARKS.—The pupil is presumed to have learned heretofore the series of Presidents from Washington to Grover Cleveland, and to have recited it forwards and backwards many times. Now let him learn the dates of their accession to office, and then let him recite the series both ways in connection with those dates several times: as, George Washington, 1789; John Adams, 1797; Thomas Jefferson, 1801, &c., &c., to Grover Cleveland, 1893 and then back to Washington. Although it is much better for the pupil to find his own analytic date-words, yet, as many may not have the time to do so while studying this lesson, I append a few explanations of the facts on which the above analytic date-words are founded.

"'Fabian' was applied to the military tactics of Washington, on some occasions, when he imitated the policy of Quintus Fabius Maximus Verrucosus, a Roman General who not daring to hazard a battle against Hannibal, harassed his army by marches, counter-marches, and ambuscades." "Bickerings" were incessant during John Adams's administration between his own supporters and the faction of Hamilton. "Steed"—Jefferson rode on horseback to the Capitol to take his oath of office as President. Arrived there he dismounted and fastened his steed to an elm-tree, since known as Jefferson's tree. He did this to signalise his disapprobation of royalty, and his preference for democratic equality. "Speculative" were the celebrated "Madison Papers." "Doctrine"—the Monroe doctrine declared that no foreign power should acquire additional dominion in America. "Unlucky" was correctly applied to John Quincy Adams's administration. See Barnes's U. S. His., p. 175. "Unwhipped"—Jackson always came off victorious in all his duels and military campaigns. "Mocked"—Van Buren was appointed by Jackson as U. S. Minister to England. The United States Senate rejected his nomination. This political insult secured much sympathy for him, and helped to make him President. "Hard-cider" was a party watchword during Harrison's campaign for the Presidency. "Rudderless"—Tyler often changed his political views, and finally turned against the United States Government, of which he had been Chief Executive. "Realm-extender"

—during Polk's administration the United States acquired the territory embracing California, Arizona, New Mexico, and Texas. "Warproof"—Taylor was a successful warrior. "Licenser"—Fillmore's administration passed the Fugitive Slave Law, which enabled the Southern masters to recapture runaway slaves. "Looming"—during Pierce's term the cloud of civil war was looming up in the distance. "Lecompton" constitution of Kansas was a pro-slavery document which Buchanan favoured. "Agitation" preceded and attended Lincoln's inauguration, and finally culminated in the civil war. "Shall"—Johnson made use of the imperative "shall" in regard to the removal of Edwin M. Stanton, for which attempt he was afterward sought to be impeached. "Chapultepec" was the battle in which Grant entered upon that career of military achievement which secured him two Presidential terms. "Cocoa" was characteristic of the drinks allowed at Hayes's table at the White House. No wine was tolerated. "Fatal" was Guiteau's shot to Garfield. "After"—although Tyler, Fillmore, Johnson, and Arthur became Presidents on the death of their chiefs, yet only Arthur succeeded to the Presidency in 1881, which is indicated by the first two consonants of "After." "Flood"—Cleveland vetoed an unprecedented number of bills during his term. There was a "flood" of them. "Fibrous" applies metaphorically to mental qualities; it means strong, sinewy—high talents, just below genius. "Boom" refers, of course, to the large amount of support which Cleveland obtained on his second election to the Presidency.

DATES OF THE ACCESSION OF THE ENGLISH SOVEREIGNS.

From 1000 A.D. to 1700 A.D., the last *three figures only* need be given, and from 1700 A.D. to date only the last

1. Should the pupil find his own analytic date-words in this exercise? 2. How were Washington's military tactics sometimes characterised? 3. What is the relation between "Bickerings" and John Adams? 4. Why is "Steed" analytic of Jefferson's inauguration? 5. What has the word "Doctrine" to do with Monroe's administration? 6. To what book is the pupil especially referred in regard to J. Q. Adams's administration? 7. Is "Mocked" a case of Con. or Ex. in the case of Van Buren?

two figures require to be given. It is better for the pupil to find his own phrases. A slight acquaintance with English History will make all the formulas here given easily understood. Green's short "History of the English People," Dickens' "Child's History of England" Collier's "History of England," and "History of England," by the author of the "Knights of St. John," may be recommended.

(1) William I. (1066)—(0) Has*t*ings (6) *ch*ampion (6) *j*ustified. (2) William II. (1087)—He (1) *d*ecorated (0) his (8) *f*ather's (7) *g*rave; or (0) *s*ilvering a (8) *f*ather's (7) *g*rave. (3) Henry I. (1100)—(1) *Th*e (0) *s*cholarly (0) *s*overeign. (4) Stephen (1135)—(1) *Th*e (3) *m*onarch's (5) *l*iar. (5) Henry II. (1154)—(1) *Th*e (5) *l*and (4) *r*estorer. (6) Richard I. (1189)—(1) *Th*e (8) *f*awners (9) *p*unished. (7) John (1199)—(1) *D*epriving a (9) *p*retty (9) *b*oy. (8) Henry III. (1216)—(1) "*Th*ird" (2) He*n*ry's (1) *t*ende*r* (6) *ch*ildhood. (9) Edward I. (1272)—(2) O*n* a (7) *c*rusade (2) u*n*supported. (10) Edward II. (1307)—(3) A *m*onarch (0) e*s*pouses a (7) *c*omrade. (11) Edward III. (1327)—He (3) *m*ade (2) Wi*n*dsor (7) *C*astle. (12) Richard II. (1377)—A (3) *m*onarch's (7) *c*ollector (7) *k*illed. (13) Henry IV. (1399)—A (3) *m*onarch (9) *p*unished (9) *b*orderers. (14) Henry V. (1413)—A (4) *r*ioter (1) *t*urned (3) *m*onarch. (15) Henry VI. (1422)—(4) *R*oyalty (2) i*n* (2) i*n*fancy; or (4) A*r*c (2) u*n*justly (2) i*n*flamed. (16) Edward IV. (1461)—(4) Yo*r*k (6) *ch*ampioned (1) *T*owton. (17) Edward V. (1483)—(4) *R*uler (8) "*F*ifth" (3) *m*urdered. (18) Richard III. (1483)—(4) *R*ichard (8) *f*eigns (3) *m*odesty. (19) Henry VII. (1486)—(4) *R*oses (8) *f*inally (6) *j*oined. (20) Henry VIII. (1509)—A (5) *l*ady (0) *s*laying (9) *p*olicy. (21) Edward VI. (1547)—A (5) *l*ad (4) *r*oyally (7) *g*ood; or, a (5) wi*l*l (4) *r*equiring a (7) *c*ouncil. (22) Mary (1553)—(5) *L*uckless (5) *l*oving (3) *M*ary. (23) Elizabeth (1558)—(5) E*l*izabeth (5) *l*iked (8) *v*etoes. (24) James I. (1603)—(6) *J*ames a (0) *S*cottish (3) *m*onarch. (25) Charles I. (1625)—(6) *Ch*arles' (2) i*n*supportable (5) i*l*legalities. (26) Council and Parliament (1649)—(6) *Ch*arles (4) *r*ightly (9) *b*eheaded. (27) Oliver Cromwell (1653)—(6) *G*eneral (5) O*l*iver's (3) *m*astery. (28) Richard Cromwell (1658)—(6) *G*eneral (5) O*l*iver's (8) o*ff*spring. (29) Council and Parliament (1659)—A (6) *J*unta

(5) *l*eading (9) *P*arliament. (30) Charles II. (1660)—(6) *Ch*eerful (6) *Ch*arles (0) *S*econd. (31) James II. (1685)—(6) *J*ames' (8) *f*ollowers (5) e*l*ated. (32) William III. and Mary (1689)—(6) *J*oining (8) *o*f (9) *P*owers. (33) Anne (1702)—(0) *S*ubmissive (2) A*n*ne. (34) George I. (1714)—(1) U*t*terly (4) *r*esigned. (35) George II. (1727)—(2) A*n*spach's (7) *C*aroline. (36) George III. (1760)—(6) *G*eorge's (0) *S*overeignty. (37) George IV. (1820)—(2) U*n*divorcible (0) *S*overeign. (38) William IV. (1830)—(3) *M*idshipman (0) *S*overeign. (39) Victoria (1837)—A (3) *m*odel (7) *Q*ueen.

EXPLANATIONS.

(1) Edward the Confessor, always fond of the Normans, had promised that on his death his kingdom should go to Duke William of Normandy. (2) William II. early directed a goldsmith to decorate his father's grave with gold and silver ornaments. (3) Henry I. was called Beauclerc, or fine Scholar. (4) Stephen had produced a false witness to swear that the late king on his deathbed had named him (Stephen) as his heir. (5) Henry II. revoked most of the grants of land that had been hastily made during the late troubles. (6) Richard punished the people who had befriended him against his father. (7) Arthur had the best right to the throne, but John imprisoned and murdered him. (8) Henry III. was crowned at the age of ten. "Third" tells *which* Henry is meant. (9) Edward I. declared—"I will go on, if I go on with no other follower than my groom." (10) Gaveston was the king's comrade and favourite, and was finally beheaded by the indignant barons. (11) Edward III. erected Windsor Castle. (12) The king's poll-tax collector was killed by Wat Tyler. (13) A successful Scottish war was this monarch's first achievement. (14) Riotous Prince Hal became a spirited, valiant king. (15) Henry VI. was only nine months old when his predecessor died. (16) Edward IV., with aid of the Earl of Warwick, won the great battle at Towton; 40,000 men were slain. (17) Edward V. was only thirteen years old. The Lord Protector, Duke of Gloucester, threw him, with his brother, into the Tower and caused them to

be murdered. (18) Richard's affected modesty is conspicuously brought out in Shakespeare's tragedy of Richard III. (19) Henry VII., to quell forever the hostility of the rival Roses, married Elizabeth of York, the daughter of Edward IV. (20) The formula in this case is clearly justified by history. (21) Edward VI. was but ten years old. Henry VIII. had provided in his will that a council of sixteen should govern during Edward's minority. (22) Mary was fond of her husband, who cared little for her, and unlucky in her advisers. (23) Elizabeth showed the natural arbitrariness of her disposition in her vetoes. In one year—1597—she refused the royal assent to 48 bills passed by the Commons. (24) James I. was the first Scottish king that reigned over England. (25) Charles I. lost his life in the attempt to act independent of the Commons. (26) If anyone thinks that Charles was not rightfully beheaded, he could make the phrase—(6) *Ch*arles (4) w*r*ongfully (9) *b*eheaded. (27) The phrase is obviously true. (28) The phrase gives the exact date of Richard Cromwell's accession and the word "offspring" means Richard Cromwell. (29) A Junta here means the "council." (30) Charles Second was called the "merry" monarch. (31) Parliament at once voted James II. nearly two million pounds sterling per annum for life. (32) William and Mary were coördinate sovereigns. (33) Anne was truly "submissive" or easily influenced. (34 and 35) Green intimates that George I. and George II. hardly affected the course of events—the former followed the advice of his ministers and the latter of his wife Caroline. (36) George III. was emphatically a sovereign. (37) George IV. had tried ineffectually to get rid of his wife ; her death at last released him. (38) William IV. had been a midshipman in the navy. (39) Victoria has certainly proved herself to be a "Model Queen."

(3) THE PUPIL MUST POSSESS SUCH A FAMILIARITY WITH THE LAWS OF IN., EX., AND CON., NOT MERELY IN THEIR THEORETIC AND ABSTRACT ASPECTS, BUT IN THAT PRACTICAL CHARACTER AND WORKING POWER OF THEM WHICH I TEACH, THAT HE CAN INSTANTLY APPLY THEM TO THE EVERY-DAY AFFAIRS AND ORDINARY OCCURRENCES AND EVENTS OF LIFE.

If you know that the number of square * miles in the area of the State of New York runs into *thousands*, and you wish to remember that the *exact number* of thousands is 47, you could accomplish this object if you found a word which spells 47, and is at the same time connected by In., Ex., or Con. to New York. You try the varieties of Inclusion; and in synonymous Inclusion you find 47 in the word "Yo*rk*" itself, the "y" having no figure value, and "r" standing for 4, and "k" for 7; thus you cannot *see* the name of New York or *think of it* without having conclusive evidence of the number of thousands of square miles the State contains.

The title of a subject, the name or description of an event or date, can always be safely abridged or bracketed in part in the formula, as 47 [New] Yo*rk*. But no one could imagine that "York" in this connection [47 thousand square miles] means any of the towns or country seats of the United States which are called "York." If the context makes an otherwise indefinite thing definite, it is sufficient.

Analytic date and number words do not have to be memorised.—Seeing is believing, and, in this case, *remembering* too. If you thoroughly master my system you can find, in most cases, analytic date and number words without any difficulty, and by means of them you can remember *thousands* of dates and sets of figures, when without the system you could have remembered only five or ten of them.

Suppose in your haste you failed to notice that "York" spells 47, and you then proceed to try Inclusion by Genus and Species; regarding York as the general word, you would find *New* York as a species or kind of York; the same with Yorkshire, Yorktown, York Minster, etc. In this way you would, if your mastery of the Figure Alphabet were perfect, scarcely fail to notice that York spells 47; but if you fail, you then try Inclusion by Whole and Part, and run over the political divisions of the State until you come to *Rock*land County, and there you find in its first two consonants the letters "r" and "ck" (the equivalent

* See Lippincott's Gazetteer, p. 1573.

of "k" in sound). These consonants spell 47. You would find the same consonants in the County of He*rk*imer.

Suppose, however, that from unfamiliarity with the Figure Alphabet, or from want of considerable practice, you do not succeed in noticing that *Rock*land or He*rk*imer contains the number 47, you try Inclusion by Abstract and Concrete, and regarding the State of New York as the Concrete, and the Abstract or characterizing epithet "*rocky*" as applicable to New York, you would then find in that word "*rocky*" the number 47.

If you did fail, you would try Exclusion, and you would find nothing which is the antithesis of the area of New York. You might find, however, a *weak form* of Exclusion if you consider that the area is the surface, and what is below the surface as the opposite of it. In the latter case you would find in the words "E*r*ie *C*anal," which is a great artificial channel running through a part of the State, the letters "r" and "c" hard, which spell 47. A more exact Exclusion might be found in the word "*ring*," which spells 47. For if we consider the shape of the boundary of New York we would see that in no vague sense a ring, as a circle, is the opposite of it.

But suppose that from a chronic absent-mindedness or an overworked brain, or downright bad physical health or insufficient knowledge of the system, you failed to see 47 in any of the foregoing cases, you would try Concurrence. Considering that the State of New York is largely agricultural, you would find that the implement of farming known as a "*Rak*e" would spell 47; this would be a case of Concurrence. In a political sense, the word "*rings*" gives 47, as New York has been celebrated for them.

All that the student requires is *one* analytic word. I have gone through the varieties of Inclusion, through Exclusion, and Concurrence, merely to show *how to find* analytic words and not because more than one word was necessary.

According to the census report of 1890, the number of square miles of *land* in the State of New York is 47,620, or (4) Yo*r*k's (7) Ac*r*es (6) *S*urely (2) *N*ot (0) *S*ubmerged; the number of square miles of *land and water* in it is 49,170, or (4) Yo*r*k's (9) *P*lains (1) Wi*th* (7) Accompanying (0) *S*ealets.

NUMBER OF SHAKESPEARE'S PLAYS.

We will try another case: You want to remember the number of plays that Shakespeare wrote. You know it is less than 50; but you wish to remember the exact number —it was 37. You experiment; you try the varieties of Inclusion, and among the rest you try Whole and Part; you find in the first two consonants of the name *Mac*beth the figures 37; but if you did not notice that *Mac*beth afforded you the means of always remembering that the Shakespeare Plays numbered 37, you would try Exclusion perhaps. If you look upon the attempt to ascribe the authorship of the Shakespeare Plays to Bacon as a *mock*ery you would find in the first two consonants of that word the figures 37 through the operation of Exclusion; and if you recollect that the character of Shylock was played with great success at Old Drury, February 17, 1741, by Charles *Mac*lin, you would find in the first two consonants of his name the figures 37 through Concurrence.

DUKE OF WELLINGTON AND NAPOLEON.

Napoleon Bonaparte was born in 1769. As a boy he was finely formed. "*Sha*pely" (69) gives his birth-date by In. by A. and C. He evinced the opposite of the temper usually ascribed to the "*Shep*herd-boy" (69)—a birth-date by Ex. "*Cha*plet"—a wreath or garland sighed for by him in his ambitious hopes—expresses his birth-date by Con. His death occurred in 1821. "*End*" (21) or *Un-d*one" (21) expresses his death-date by synonymous Inclusion. "*Na*tivity" (21) indicates it by Ex. Since he died from cancer in the stomach, he could retain very little food. "*Ind*igestion" (21) makes his death-date by Con.

Wellington's birth, in 1769, may be expressed by "*Shee*p-faced" (69), a term his own mother applied to him when a boy. In his childhood, he was blue-eyed, hawk-nosed, slender, and ungainly, "*Chub*by" (69), by Ex., expresses his birth-date. A more vivid concurrence can scarcely be imagined, since he and Bonaparte were both born in the same year, 1769.

Wellington died in 1852 at Wilmer Castle. "Wi*lm*er" expresses the date of his death by only one year too many. But a means of remembrance that requires readjustment or modification can seldom be relied upon, except by those who are practised in Higher Analysis. He was 83 years old when he died. "*Lan*tern-jawed" (52) expresses his death-date by In., by A. and C. No man was ever more honored after his death than Wellington. "A*lie*nated" (52) expresses his death-date by Ex. A sudden illness carried him off. Hence "I*ll*ness" (52) is a fact connected with his death by Con.

These elaborate illustrations must indicate to any student how to apply the laws of In., Ex., and Con., so as to find analytic date and number words. Cases of Ex. give good practice, but are rarely ever necessary.

MISCELLANEOUS EXAMPLES.

Inclusion, as applied to the events of life possesses the same variety as in regard to words. In dates of the last and present century, the expression of the *last two figures* is sufficient. William Cullen Bryant was born in 1794. '94 is found in the name *Br*yant, a case of Synonymous Inclusion. Aaron Burr killed Alexander Hamilton in a duel in 1804. As we know it was about the beginning of this century, this translation of the 4 indicates the exact date and is found in Aa*r*on and relieves the memory of all doubt.

Sherman made his famous march through the South in 1864. 64 is found in the word *Sher*man [or by two words: (6) *Sh*erman (4) *R*avaging]. In dates previous to the last century, the last three figures must be expressed. Movable types were invented in 1438. We know it was not A.D. 438, but was 1438; a mistake of 1,000 years is not possible. If we translate 438 it will mean to us the

1. Who applied the term "sheep-faced" to Wellington when he was a boy? 2. What is the most vivid case of Con. here given? 3. Why do we not give a value to both l's in the word "illness"? 4. What do these illustrations indicate? 5. What does inclusion as applied to the events of life possess? 6. Why is it not necessary to have a date-word to express the date of Hamilton's death in which the o is indicated as well as the 4?

...ne as 1438. 438 is found in the analytic word (438) "*Remov*able" [or, to express all the numbers, thus: (1) *T*ypes (4) a*r*e (3) *m*ovable (8) *f*igures].

The Phonograph was invented in 1877. The expression of 77 is found in *Cog*nate, and that indicates the resemblance of the human mechanism to receive sounds to the Phonograph; for both processes utilize vibrations, and are therefore from similarity of functions "Cognate" methods. How any one could forget analytic date-words is more than I can understand, especially when formed by himself.

Exclusion.—The first steamship crossed the Atlantic in 1819. 19 is found in "*Tub*" by Exclusion, as the most opposite to a steam-driven ship. Andrew Johnson was advanced to the Presidency on the death of Abraham Lincoln in 1865. 65 is expressed by Exclusion in the word "*Shel*ved," which means the opposite of promotion [or by two words, thus: (6) *J*ohnson (5) *L*evated]. "*Men*dacious" expresses by Exclusion the birth of George Washington in 1732, as indicating a youthful quality the opposite of that which he manifested, and by two words: (3) A*m*erica's (2) I*n*fant. Other examples are given in subsequent pages.

Concurrence finds incidents or concomitants of a fact or event, something that by accident became connected with it. It may be a forerunner or successor, the cause or consequence, or a contemporaneous fact, etc.

William Cullen Bryant, from a fall, died in 1878. The last two figures 78 are found by Concurrence in the initial consonants of the phrase "(7) *C*ullen's (8) *F*all." Cullen will be easily identified, as the middle name of Bryant. When Jefferson became Vice-President, in 1797, he wore the customary big-wig; and the first two consonants of "*Big*-wig" express by Concurrence that date.

Artillery was invented in 1340. 340 indicates that date, and by Concurrence we find those figures in the first three consonants of "*Merc*iless." Or (3) *M*urderous (4) A*r*tillery's (0) *S*courge. Plymouth (Mass.) was settled in 1620. 620 will indicate it. We find these figures in "*Chance*,"

1. What must be done when we wish to find date-words the events of which took place previous to the last century? 2. Can a person easily forget analytic date-words formed by himself?

which by Concurrence describes the risk they ran. The Telephone was invented in 1877. Whoever has listened to the telephone to identify a speaker, and heard others talking in the shrill tones that strike upon the ear, is apt to think of the cackling of hens, and "*Cack*le" expresses the date 77.

Jefferson Davis disguised himself in the hood, shawl, and dress of his wife in 1865. "*Shawl*" by Concurrence expresses that date. The Constitution of the United States was *adopted* in 1787, which spells "*The Giving.*" To adopt the Constitution, it required the States to give their assent. They *gave* the Federal Government all the power it possessed. "*The Giving*" is therefore a case of Concurrence. A circumstance connected with settlements is *selecting* the site. Jamestown, Va., was settled in 1607, which spells "*The Choosing.*" This phrase relates to the settlement by Concurrence. Harvard College was founded in 1636, which spells "*Teach Much.*" Whether we take this phrase as describing the object or result of founding that college, it is a case of Concurrence. A college is sometimes called a seat of learning. Yale College was founded in 1701, which spells "*Took* a *seat.*" This phrase describes the locating of the college, and is therefore a relation by Concurrence.

(4) THE PUPIL MUST SEEK *analytic* WORDS WHICH ARE *approximately specific*, AS BIRTH-DATE WORDS MUST, WHERE POSSIBLE, RELATE TO BIRTH OR JUVENILE EVENTS; MARRIAGE-DATE WORDS, TO EVENTS CONNECTED NEARLY OR REMOTELY WITH THE MARRIAGE; DATE WORDS FOR ANY OTHER EVENT IN LIFE OR FACT IN HISTORY SHOULD, DIRECTLY OR INDIRECLY, RELATE TO SUCH EVENT OR FACT; AND, FINALLY, DEATH-DATE WORDS SHOULD REFER TO INCIDENTS WHICH PRECEDED, ACCOMPANIED, OR FOLLOWED THE FACT OF THE DEATH.

This rule, theoretically correct, must be very liberally interpreted in practice. This lesson furnishes numerous illustrative examples.

As shown heretofore, the *pupil must know the facts*, and the System will then help him to fix their date.

A pupil had loaned money to a horse-dealer who lived at No. 715 of a certain street. He knew the house well, yet

he could not recollect the number 715. At length he thought of "*Cattle*" as a figure word to enable him to remember the number. Yet the word is general and apparently unconnected with the house, as it was not a stable but a boarding-house. Yet, as cattle and horse are species of the genus domestic animal, and cattle would recall horses and horse-dealer, he did right to use that term, and it served him well. At first he instantly recalled the word "cattle" whenever he thought of the horse-dealer's residence, and at once 715 was given him. After a time, he directly recalled 715 without first thinking of "cattle." This is always the case where the method is applied. It is soon no longer required in that case. When this pupil told me what he had done, I asked him why he had not used the phrase "(7) *C*ollect (1) *Th*e (5) *L*oan," which was the object he had in view in thinking of, or of sending to, that address. His reply was that "cattle" served his purpose. With one person a single word, with another a phrase, and with another a sentence, is most serviceable. He had other borrowers who lived at other places. Why could this phrase "Collect the loan," which would apply in its meaning to the case of others, remind him of this particular debtor's home? Because, if he had consciously devised that phrase to identify this debtor's address, it could apply in his mind to the address of no other debtor. Thus the *facts help us devise the number phrase, and the phrase helps revive the facts.*

I do not, for instance, undertake in this lesson to teach the pupil that Washington never left America but once, when he accompanied his invalid brother to Barbadoes in 1751, in search of health. But if he knows these facts, my method helps him retain the date, by using those facts for this purpose; as, (1) *T*o (7) *G*ain (5) Is*l*and (1) *T*onic; or (17)51 Hea*lth*. We know that "health" is an object with everybody in all countries and in all ages, and is therefore a word of the most general character and of the most extended application. How, then, can it have any *special* significance in this case? Because by knowing the facts, in the first place, as "health" was the object of the visit of Washington and his brother; and seeking for a date word which spells (17)51, the pupil has discovered that this

general word "health" spells that date; and, as the pupil has applied the word "health" to this date and to no other, he has thus made the general word specific for his purpose. Because "tonic" is a health promoter, and "island" is a help to recall the specific Islands of Barbadoes, the phrase (1) "*T*o (7) *G*ain (5) Is*l*and (1) *T*onic," is more specific than "health." But either the single word or phrase becomes specific, if the facts of the case are assimilated, and then by the pupil are applied to furnish a date word.

BIOGRAPHY, HISTORY, AND SCIENCE.

Much of the substance and pith of historic eras can be expressed in the analytic words, phrases, or sentences with which their dates are enunciated. If the foregoing and subsequent examples are carefully, not hurriedly, studied, the student can readily hereafter retain a great deal of the significance of facts, events, or epochs by his infallible recollection of the analytic expression of their dates. As with history, so with the arts and science, etc.

Population of the United States of America is now (1895) 67,000,000 = *G*eneral *C*ultivation or *Sh*arp Yan*k*ees. When dealing with the *number* of millions or thousands only, it is not necessary to express the ciphers. Pop. of Great Britain = 38,000,000, or (3) *M*ightiest (8) *F*olks; or *M*anufacturing *F*abrics; or *M*oney-making *F*reetraders. Pop. of Africa, 127,000,000 = *Th*e *N*egro *C*ontinent. Pop. of Bombay = 804,470 or *F*oreigners a*s* a *r*ule a*r*e E*ng*lish *C*itizens.

A gentleman in Bombay, who had to deal with complaints about water supplies there, told me the true population is 817,564, which he fixed by my method as follows: *F*rightful *T*o *K*eep A*ll* *J*ust *R*ight.

Pop. of Calcutta = 840,000; or *V*iceroy's *R*esidential *S*eat. Pop. of India = 292,000,000; or I*n*dia's *P*opulation E*n*umerated.

Pop. of Australasia, &c., 4,250,000 = Ou*r* I*n*dependent *L*iving Au*s*tralians.

Pop. of Melbourne with its suburbs (1891) = 490,912 = (4) Ou*r* (9) *B*iggest (0) *C*ity's (9) *B*uildings (1) *d*ecidedly

(2) *un*equalled. The "City" contains 73,361 = (7) *G*reat (3) *M*elbourne (3) *M*akes a (6) *Ch*ief (1) *T*own.

Pop. of Sydney (1891) = 386,400 = A (3) *M*ost (8) *V*aried (6) *Sh*eltering (4) Ha*r*bour (0) Ha*s* (0) *S*ydney.

Pop. of Hobart (Tasmania), 1891 = 31,196; (3) *M*any (1) *T*asmanians (1) Ea*t* (9) Ho*b*art's (6) *J*am.

Pop. of Auckland (New Zealand), with suburbs, in (1891) = 51, 287; (5) A*ll* (1) *Th*e (2) I*n*habitants (8) O*f* (7) Au*ck*land.

SPECIFIC GRAVITIES.

The Specific Gravity is the relative weight of a body compared to an equal bulk of some other body taken as a standard. This standard is usually water, for all liquids and solids, and air for gases.

1. Gold..... 19·2—*D*ollars *B*uy *Sun*dries.—Gold is made into money. The specific gravity of gold is 19·2; that is, nineteen and two-tenths. The initial consonants of the phrase "*D*ollars *B*uy *Sun*dries" express through "D" and "B" the figures 19. The "S" of "Sundries" expresses the decimal point, and the first subsequent consonant "n" expresses the decimal two-tenths.
2. Silver.... 10·4—*Th*e *S*ilver *A*ssaye*r*.
3. Platinum . 21·5—U*n*usually *D*uctile *Sol*id.—Platinum is the most ductile metal known.
4. Lead..... 11·3—*Th*e *T*in *Sm*ith.—Lead used to solder tin.
5. Mercury.. 13·5—*Th*e *M*ercury *Sol*d.
6. Copper... 8·9—*V*iew a *Sp*ire.—Copper points the lightning rods.
7. Iron..... 7·7—Hoo*k* *Sk*illet.—It means hang up an iron pot.
8. Zinc..... 6·9—A *Sh*eet *Sup*ply.—Zinc is rolled into sheets.
9. Antimony. 6·7—*G*erman *Seek*er.—Antimony was discovered by a German monk.
10. Calcium.. 1·0—Whi*te* *C*eiling.—Calcium is used in whitewashing.

1. Why could we not substitute the phrase "*Th*e *M*ercury *Shield*" for "*Th*e *M*ercury *sold*," since "S" stands for "o," and "h" has no value? 2. Why not use the phrase "Whi*te* *seal*ing" to express the Specific Gravity of Calcium? 3. Could the Atomic Weight of Silver (108) be expressed by the phrase "*Th*e *Vase*?" 4. If not, why not? 5. Would the phrase "*Th*e *S*ilver *V*ase" be better? 6. In dealing with the length of the Mississippi, why do you not give the figure value of "W" and "E" in that part of the phrase which includes the words *W*aves *E*ncroach? 7. Would you indicate this value by a cipher, then? 8. If not, why?

RIVERS.

Mississippi (4,382 miles long).—*R*ushing *M*ississippi's wa*v*es E*n*croach.—The Mississippi River frequently overflows its banks.

Nile.... (3,370 mi.)—(3) *M*ighty (3) *M*editerranean's (7) *G*reatest (0) *S*tream.

Volga... (2,400 mi.)—I*n* *R*ussia's *S*oil *S*uperior.—The Volga is the largest river in Russia, and, in fact, the largest in Europe.

Ohio.... (1,265 mi.)—*Th*e Ohio *N*ow *Sh*ips *L*ighters.

Loire.... (530 mi.)—*L*oire's *M*ajestic *S*weep.

Seine... (470 mi.)—*R*olling *G*ay *S*eine.

Spree... (220 mi.)—*N*otice *N*oble *S*pree.

Jordan.. (200 mi.)—A K*n*own *S*alty *S*olution.—The River Jordan is impregnated with considerable salt.

MOUNTAINS.

Mt. Everest [29,002] *N*amed U*p*on a *S*urvey *S*trictly U*n*ique ; or I*n*dia's *P*eak I*s* *C*ertainly U*n*equalled.—This is the highest mountain on the globe ; or I*n*dia's *B*oundary *S*ummit I*s* U*n*approachable. Kinchinjunga is 28,156 ft. high. We shall know what Mountain is meant if we omit the first syllable "kin." Hence we can use the formula, "*N*ext E*v*erest *D*awns *L*ofty *Ch*injunga."

Popocatapetl... (17,783 ft.)—*Th*e *G*reatest *C*rater o*f* *M*exico.

Mt. Brown.... (16,000 ft.)—*Th*is *Ch*arming Western *S*cenery *C*elebrated.

Mt. Blanc..... (15,781 ft.)—*Th*is *A*lpine *C*one *F*ascinates *T*ravellers.

Jungfrau..... (13,720 ft.)—*Th*is *M*ountain *A*gassiz *N*imbly *A*scended.—Prof. Agassiz was one of the first who reached the summit of this mountain.

Ben Nevis..... (4,406 ft.)—H*e*re *R*eview a *S*nowy *G*iant.

Snowdon..... (3,570 ft.)—*M*ajestic Hi*ll*s *G*reet *S*nowdon.

Saddleback... (2,787 ft.)—*N*ear *K*eswick *V*iew a *C*raig.—This mountain is situated near the town of Keswick.

1. Are there any letters in the word "Ohio" which have a figure value? 2. Do you see any way by which you can make the word "Known" stand for 2 by my figure alphabet? 3. How can you infallibly retain these figure-sentences?

LATITUDE AND LONGITUDE.

No one can have very definite or exact ideas of Geography who does not know the Latitude and Longitude of the chief Cities of the World.

Lat. = 55°— 00′	(5) *L*ondon's (5) *L*atitude (0) Ea*s*ily
(1) LONDON	(0) *S*een.
Long. = 0	(0) *S*tarting-point.
Lat. = 40°— 52′	(4) Yo*r*k (0) *C*ity's (5) *L*atitude (2) *N*amed.
(2) NEW YORK CITY	
Long. = 73°—59′	(7) *C*ommercial (3) *M*etropolis'
	(5) *L*ongitude (9) *P*ortrayed.
Lat. = 40°—00′	(4) *R*epublic's (0) *Z*ealous (0) *S*tatesman
(3) PHILADELPHIA	(0) *S*igned.
Long. = 75°—10′	(7) *Q*uaker (5) *L*ongitude (1) *T*oo
	(0) *S*ober.
Lat. 41°—45′	(4) *R*ebuilt (1) *T*own's (4) *R*eal
(4) CHICAGO	(5) *L*atitude.
Long. = 87°—50′	(8) *F*ires (7) *C*annot (5) *L*ongitude
	(0) *S*acrifice.
Lat. = 42°— 20′	(4) Ha*r*vard (2) U*n*iversity's (2) *N*earest
(5) BOSTON	(0) *C*ity.
Long. = 71°—05′	(7) *G*ives (1) *T*ea (0) *S*pillers'
	(5) *L*ongitude.
Lat. = 30°—00′	(3) *M*ississippi's (0) *S*outhernmost
(6) NEW ORLEANS	(0) *S*eaport (0) *S*erene.
Long. = 90°—00′	(9) "*B*utler (0) *S*tole (0) *S*ilver
	(0) *S*poons."*
Lat. = 39°—41′	(3) *M*ountain (9) *P*eaks (4) O'e*r*look
(7) DENVER	(1) *D*enver.
Long. = 105°—00′	(1) *D*enver's (0) *C*ertain (5) *L*ongitude
	(0) *S*afely (0) A*s*certained.
Lat. = 37°—30′	(3) *M*etallic (7) *C*alifornia's (3) *M*etropoli-
(8) SAN FRANCISCO	tan (0) *C*ity.
Long. = 122°—00′	(1) *Th*e (2) *N*avigator (2) *N*ow (0) *S*ees
	(0) *S*an Francisco.
Lat. = 34°—19′	(3) *M*en (4) *R*elish (1) Ho*t* (9) *B*aths.
(9) HOT SPRINGS	
Long. = 93°—00″	(9) *B*athing (3) *M*ust (0) *S*ave (0) *S*ickness.
Lat. = 40°—29	(4) I*r*on (0) *S*melting (2) Hau*n*ts
(10) PITTSBURG	(9) *P*ittsburg.
Long. = 79°—50′	(7) *G*reat (9) *P*ittsburg's (5) *L*ongitude
	(0) *S*ecured.

* No one supposes that Butler really stole spoons.

Lat. = 43° — 02′ (11) NIAGARA FALLS Long. = 79° — 12′	(4) *R*oaring (3) *M*agnificent (0) *C*easeless (2) *N*iagara. (7) A *C*ataract (9) *P*ours (1) A*t* (2) *N*iagara.
Lat. = 18° — 53′ (12) BOMBAY Long. = 72° — 53′	(1) *Th*e (8) *F*irst (5) Is*l*and (3) *M*et. (7) *K*ipling's (2) *N*ativity (5) We*ll* (3) *M*entioned.
Lat. = 22° — 34′ (13) CALCUTTA* Long. = 88° — 24′	(2) *N*umerous (2) *N*atives (3) *M*igrate (4) He*re*. (8) A *V*iceroy (8) *F*avours (2) *N*atural (4) *R*emembering.
Lat. = 37° — 49′ (S) (14) MELBOURNE Long. = 44° — 58′ (E)	(3) *M*elbourne's (7) *G*rounds (4) Ya*rr*a (9) *B*isects. (4) Ha*r*bour's (4) *R*iver (5) We*ll* (8) *F*urrowed.
Lat. = 33° — 55′ (S) (15) CAPETOWN Long. = 18° — 28′ (E)	(3) *M*athematical (3) *M*apping (5) Wi*ll* (5) *L*ast. (1) *T*able Bay (8) *F*avours (2) *N*umerous (8) *V*essels.

EARLY TRAINING IN FIGURES.

If the mind-wandering mode of *rote* learning is no longer practised, but an *assimilating* method is substituted for it; if we abolish the "mind-wrecking" procedure of forcing immature minds into and through studies which they cannot comprehend, and which, therefore, create chronic habits of Inattention; and if the idea of numbers and their elementary processes are *objectively* taught, until habits of sure enumeration and calculation are formed, then, when the child reaches maturity, he will rarely if ever require any conscious aid in remembering a series of 2, 3, 4, or more figures.

Meantime, a thorough training in this system tends to do

1. Will a pupil always require an aid to remember figures? 2. What is required of him in order to enable him to do away with any *conscious* aid? 3. What does a thorough training in my system accomplish in the meantime? 4. Will there ever be any *necessity* of using the figure alphabet? 5. Will not a decided benefit ensue to those who have acquired a great power of attention?

* Lord Elgin, the present Viceroy, gave Prof. Loisette H. E.'s patronage when the Professor lectured in Calcutta. As his system is the foe of all artificial methods, it is *par excellence* the "Natural" System.

away with the injurious effects of false mental habits ; to set the Memory and Attention at work in a natural way, and greatly strengthen both ; and while learning a large number of dates in a short time, or many figures in one series may still require the use of the System, unless the Numeric Thinking prior to this chapter has been mastered, yet, in the ordinary way of meeting figures in reading, study, or business, there will seldom occur any *necessity* for resorting to the method taught in this lesson.

WHAT MUST BE DONE FOR AN ACQUIRED ATTENTION.

In the case of those who have not inherited, but who have *acquired*, a great power of Attention, a decided *benefit* will ensue, however, if throughout life they occasionally use the System in regard to numbers and in learning prose and poetry by the Analytic-Synthetic and Interrogative Analysis Methods.

Where a great power of Attention has been renewed or originally acquired, it requires considerable effort to *continue* that power. The unnumbered objects of thought which civilization constantly brings before the mind, without giving any opportunity for a mastery of many of them ; the fierce rivalries of interest, and the enervating habits of body which are constantly being formed or perpetuated—all alike and together tend to break down an acquired power of Attention. It is said that Alexander Hamilton used to go through the demonstrations of Euclid's Geometry before the commencement of each Session of the early Congress. For what purpose ? In order to be able to make use of geometrical knowledge in debate ? Certainly not. He reviewed this study to stiffen the back-bone of his power of Attention. And he possessed this power in an extraordinary degree by nature. I am not suggesting any such severe course of self-discipline. But if the pupil

1. Does it require any effort to *continue* that power ? 2. What tends to break down an acquired power of attention ? 3. What suggestion is here given the pupil in regard to this ? 4. Is this method easier and less severe than Hamilton's ? 5. Is it not more effectual ?

whose *attention was formerly weak* will never allow a date to come before him without fixing it in mind by my method, and if he will also occasionally learn by heart a passage of prose or poetry by my *assimilating* methods, he will train his Attention in a pleasanter and more effective way than Hamilton did his by his studies in Euclid—besides making himself conspicuously accurate where most men are notoriously inaccurate.

[It is a most misleading mistake to suppose that the principles of the following or either of the previous chapters are to be *consciously and constantly* used by the pupil, whether he be a student or a man of business. It is only used at all during the training period—rarely afterwards. But during the training period, I desire the pupil to make as much use of the devices and principles of the system as he possibly can—and the more he uses them the sooner he no longer has occasion to use them.]

THOUGHTIVE UNIFICATIONS.

CONNECTING THE UNCONNECTED.

A Congressman could not remember the name of Zachary Taylor, the twelfth President of the United States, but he could always readily recall his nick-name, "Rough and Ready." In this case there was no *revivable* connection established in his mind between the *name* Zachary Taylor and the idea or image of the *man* known as Zachary Taylor—but there *was* a revivable connection in his mind between the name "Rough and Ready" and the idea or image of that man. Now the thing to be done to enable this Congressman to readily recall the name Zachary Taylor was to *establish* or *make a revivable connection* between the name Zachary Taylor and the image of him, or some characteristic of him, as it was known to that Congressman; or to connect the well-remembered name "Rough and Ready" to the usually forgotten name Zachary Taylor. This would be a *device* for helping him to revive this hitherto unrecallable name. But another and better way to aid him would be to STRENGTHEN his REVIVING POWER GENERALLY, so that he could readily recall the name Zachary Taylor as well as his other previous experiences; for there is no doubt that he had a *record* in his mind of the name Zachary Taylor; for whenever he failed to recall it, he *recognised* it the moment he saw it, or it was mentioned in his presence. This proved that he *knew* the name but could not *revive* it.

1. What difficulty did the Congressman have in connection with Z. Taylor? 2. What caused it? 3. What would have been his best aid to remember the name?

HOW TO HELP THE MEMORY.

There are therefore two ways of helping the memory. (1) By a device resorted to in each separate case to help make a more vivid First Impression. Nearly all Memory Systems hitherto taught have only been such Devices; of little benefit except in the cases where they have been *actually applied*—mere temporary appliances, and many of them of doubtful value, devoid of any strengthening power. (2) By a Method of Memory TRAINING. This is the unique character of my System. It is used as a device during the process of developing the latent powers of the Memory and the Attention, but the *result of its use* is to so strengthen the Memory that, as a Device it is no longer required. As a trainer my System operates in three ways. (1) It increases the general *Impressionability*, so that all First Impressions must be more vivid than they have ever been before. (2) It increases the general *Revivability*, so that First Impressions are more under the control of the will, and can be afterward recalled when desired. (3) It compels the Intellect to stay with the senses and thereby it abolishes mind-wandering.

A one-sided view of the Memory proclaims that if vivid First Impressions are made in all cases, that is enough. This opinion implies a limited acquaintance with the different kind of memories. In some cases where a person is troubled with chronic forgetfulness, a vivid First Impression may be received, and no recollection of it will long survive. That a vivid impression was received is proved by the fact that, shortly after the occurrence, his memory of the details of it is possibly nearly perfect, and yet, after the lapse of a few days, or weeks, or months, the recollection of every trace of the occurrence has vanished. After the total oblivion of the matter in his waking moments, he will sometimes recall all the details of the affair in a dream. This is demonstration irresistible that the trouble in this

1. Did he have a *record* of the name in his mind? 2. How many ways are there of helping the memory? 3. What is the first way? 4. The second? 5. What is meant by Memory Training? 6. What is the unique character of my system? 7. What is the result of its use? 8. In how many ways does my system operate as a Trainer? 9. What are they?

case lies, not in receiving vivid First Impressions, but in the weakness of his reviving power. In fact, some memories are much oftener weak from deficiency in reviving power than from feebleness of first impressions. If, however, Impressionability be increased to the highest degree in all cases, and Revivability be strengthened to the same extent, all memories will be good, however bad some of them may theretofore have been in any or in all respects.

MODES OF ESTABLISHING CONNECTIONS.

RECOLLECTIVE ANALYSIS is used to memorise a series of words or facts between every pair of which the relation of In., Ex., or Con. exists. It equally applies to a single pair of such words or facts.

RECOLLECTIVE SYNTHESIS OR THOUGHTIVE UNIFICATION is used where *no relation exists.*

A *revivable* connection is established in such cases by means of a Correlation which always consists of one or more unifying intermediates. And the words, hitherto ununited, which are thus cemented together, are called Extremes.

We had experience in learning the Series in the first chapter that the application of the Laws of In., Ex., and Con. enable us to memorise those Series in much less time than it would have taken had we not known *how to make use of* those Laws. Many people could *never* have committed to memory such Series by mere *rote* or *repetition*, and not one in a hundred could have learnt to say them backwards by *rote* alone. Yet my Pupils easily learn them both ways, because Analysis affords the highest possible AID to the Natural Memory. In fact, the *deepest* and *most abiding* impression that can be made upon the Natural

1. When is Rec. Analysis used? 2. Rec. Synthesis? 3. How is a revivable connection established? 4. Have you carefully read every question at the bottom of the previous page, and *thought out* or written out answers to them? 5. Since questions are valuable helps to the learner, will you faithfully read all the questions hereafter in this lesson, and write out or think out the answers thereto? 6. What have the laws of In., Ex., or Con. enabled us to do? 7. Could all people have learned them by rote? 8. What affords the highest possible aid to the natural memory? 9. How are the deepest and most abiding impressions made on the Natural Memory? 10. What are the Memory-Senses?

Memory is by impressing it with *relations* of In., Ex., or Con.; because these are the Memory-Senses (if the phrase be allowed), these are the Eyes, Ears, Touch, Taste, and Smell of the Memory: and we have only to impress the *Memory* according to the laws of its own nature and the *Memory* will RETAIN the impression. This is exactly what my Art does: for I translate every case of Synthesis into an Analytic series by supplying one or more *Memory-intermediates* that grow out of the "Extremes," each one of which is an instance of In., Ex., or Con.—Thus, every example of Synthesis is a **developed or extended Analysis.** To make this translation from Synthesis into Analysis requires no intellectual ingenuity—no constructive power of imagination—but only a *recall to consciousness*, through In., Ex., or Con., of what we already *know* about the "Extremes." I call a specimen of developed Analysis a Correlation, because the Intermediates sustain the *direct, immediate*, and *specific* relation of In., Ex., or Con. to the "Extremes" (having nothing in common, in principle or nature, with the old-fashioned Mnemonical "Links," or "Phrases").

EXAMPLES OF CORRELATIONS.

Make your own Correlation (different from mine, given below) between each of the following seven pairs of Extremes:

[*In.* may be represented by 1, *Ex.* by 2, and *Con.* by 3]:

1. ANCHOR	(1) Sheet Anchor (1) Sheet (1) Bed (1)	BOLSTER
——	(3) Capstan (1) Night-cap (3) Pillow (3)	——
——	(3) Roadstead (1) Bedstead	——
——	(3) Sea Bed (1)	——
2. PEN	(3) Ink (1) Ink-bottle (1) Smelling-bottle (3)	NOSE
——	(1) Pensive (2) Gay (1) Nosegay	——
——	(3) Wiper (3)	——
3. SLAIN	(3) Battle (3) Joshua (3)	MOON
——	(1) Struck-down (1) Moon-struck (1)	——
——	(3) Fallen (2) Risen (3)	——
4. TEA	(1) Teaspoon (1) Spooney (1)	LOVER
——	(3) Sugar (1) Sweet (1) Sweetheart (1)	——
5. ARROW	(3) Tell (3) Apple (3) Cider Mill (1)	TREADMILL
——	(3) Flight (3) Arrest (3) Convict (3)	——
6. BEE	(1) Beeswax (1) Sealing-wax (3) Title deeds (3)	ATTORNEY
——	(1) Queen Bee (1) Queen's Counsel (3)	——
7. LASH	(1) Eye-lash (1) Glass Eye (1) Substitute (1)	VICARIOUS

Children and Adults, who have thoroughly learned Recollective Analysis and practised its exercises, find no difficulty in making Correlations, unless they are so afflicted with Mind-Wandering that they have never *digested* the impressions they have received, or unless their intellectual operations have been twisted out of the natural order by perversities of early education; but even in these cases the *diligent* student will be able—usually before these pages are finished—at once to correlate any word whatever to any or all the words in any dictionary. A learned Professor declared that no person unacquainted with astronomy could correlate "Moon" to "Omnibus." He did it thus: MOON—(3) Gibbous [one of the phases of the Moon]—(1) "Bus"—(1) OMNIBUS. I asked a pupil then present—a girl nine years old—to connect them. She promptly replied, "MOON—(1) Honey-moon—(3) Kissing—(1) Buss—(1) OMNIBUS." A moment after, she gave another: "MOON—(1) Full Moon—(1) 'Full inside'—(3) OMNIBUS." Once more: "MOON—(1) Moonlight—(1) Lightning—(3) 'Conductor'—(3) OMNIBUS." Another pupil imagined it would be *impossible* to correlate the following *letters* of the alphabet to *words* beginning with the same letters, as "A" to "Anchor, "B" to "Bull," "C" to "Cab," "D" to "Doge," —as well as "Cooley" to "The." There are, however, no words which my Pupils cannot soon learn to correlate together with the greatest readiness, as:

"A" (1) First Letter (1) First Mate (3) Ship (3) "ANCHOR"
" (1) Aviary (3) Bird (3) Flew (1) Fluke (1) ——
"B" (1) Bee (3) Sting (1) Sharp Pain (1) Sharp Horns (1) "BULL"
" (1) Below (1) Bellow (3) ——
"C" (1) Sea (3) Ocean Steamer (1) Cabin (1) "CAB"
"D" (1) "D.D." (1) Clerical Title (1) Venetian Title (1) "DOGE"
"COOLEY" (1) Coolly Articulated (1) Definite Article (1) "THE"

All possible cases to be memorised can be reduced to (1) ISOLATED FACTS, where each fact is correlated to some

1. What must we do in order to make the memory retain the impression? 2. Does my Art do this? 3. Into what do I translate every case of Synthesis? 4. What does it then become? 5. What is a correlation? 6. Are correlations difficult to make?

fact in its surroundings through which you must think as the *Best Known*, in order to recall it—many instances will be given in this lesson:—or, (2) SERIAL FACTS, which must be remembered in the *exact order* in which they were presented to the mind—illustrated by many examples in this Lesson.

NEVER FORGET that this System serves two distinct purposes: (1) That it is a Device for memorising any Isolated Fact or Serial Facts by means of mere Analysis, otherwise called Instantaneous Assimilation or memorised Correlations, as well as by other means. (2) And that by memorising and repeating for a considerable period Analytic Series, and especially by *making* and *memorising* one's own Correlations, it is an unequalled system of Memory-TRAINING. Let the ambitious Pupil **learn as many examples as I give in the lessons in order to so strengthen his natural memory that he will no longer have to use the** *device* **for memorising, his natural memory permanently retaining all he desires to remember.** This result comes only to those who carry out ALL the directions with genuine alacrity—not shirking one of them.

ANALYSIS AND SYNTHESIS COMPARED.

It is sometimes asked, cannot "Analysis" cement together unconnected "Extremes"? This question implies a contradiction of terms. I reply, "Yes, by *accident*, and by accident only."

Analysis is *declaratory*—Synthesis is *constructive*. Analysis *discovers* and *describes* the relations actually existing—Synthesis applies connecting intermediates where no relations previously existed, and then Analysis characterizes the relations introduced by the cementing intermediates.

Even in the First Exercises the Series are Synthetic.

1. Do all persons find them easy? 2. What persons do not? 3. Can such persons become expert in making them? 4. How? 5. Make an original correlation of your own between these extremes. 6. To what may all possible cases to be remembered be reduced? 7. What are Isolated facts? 8. What two distinct purposes does my system serve?

Every pair of words of which such Series consists exemplifies the relations either of Inclusion, Exclusion, or Concurrence. I used to call that Lesson Recollective Analysis, because in it the pupil is engaged in familiarising himself with those Laws of Assimilation, and in *discovering* and *declaring* the character of the relations between the words of such Synthetic Series. He commits to memory such a series by *thinking* of the relations between the words. A minor object is to memorise the Series—but a greater and higher object never lost sight of in these Lessons is to train the Memory and Attention. And let the pupil clearly notice *how* this training comes about. Merely running over a Series—two words at a time—without discriminating the *kind* and *quality* of the relations between the words—hoping that the mind unpractised in the Laws of Assimilation will intuitively feel those relations, constitutes no training of the Memory. Such reading neither strengthens the old power nor develops any new power. It is a blind act of unconscious absorption, however little be absorbed. But if the mind *acts* in such cases and *tries to find* and *characterise* the relations, then the appreciation of the relations of In., Ex., and Con., is quickened and invigorated and becomes in time so intensified that those relations are thereafter almost automatically felt, and the impression they make on the Memory, henceforth, is the most vivid possible.

Every Correlation is a Synthetic Series. It can be and should *always* be analyzed, but Analysis never makes a Correlation. That is the function of Synthesis. Since "extremes" are words with no relation between them, Analysis cannot find what does not exist. But *accident* sometimes makes a *spelling* or *letter* relation between the "Extremes," and then Analysis can memorise these "extremes" by means of such accidental relations. To illustrate :—

A physician was troubled to remember on which side of the heart are the "mitral valves." As they are on the left

1. To whom only does this result come? 2. What question is frequently asked? 3. What is the reply? 4. Is analysis declaratory? 5. If so, why? 6. Is Synthesis constructive? 7. If so, explain why? 8. Why is the first lesson called Rec. Analysis?

side of the heart, he might have noticed that "mitral" ends with the letter "l," and that the word "left" begins with the letter "l"—as "l" belongs to both of these words, here would be a case of analysis. Such a device, however, could never be erected into a rule, for it is founded on accident only, and cannot be used in all cases. How much more vivid to many persons in this example is a Correlation, thus: "*Mitral valves* . . . mitred Abbots.. none left . . . *left.*"

To remember which of the University crews wears *dark* blue and which *light*, we can note that the vowel "I" belongs alike to Cambridge and "Light" and is absent from Oxford and "Dark."

Take a case in Trigonometry—a *Complement* is what remains after subtracting an angle from *one* right-angle. Take 60 degrees from 90 degrees, and we have the complement 30 degrees—a *Supplement* is what remains after subtracting an angle from two right-angles. Take 120 degrees from 180 degrees and we have the supplement 60 degrees. How to remember that "Complement" relates to one right-angle, and "Supplement" relates to two right-angles, is a difficulty for a poor memory. Looking at the accidents of the subject, we see that Supplement and two right-angles have a relation in this, that Supplement begins with *S* and two begins with *T*. S..T. Hence we must remember that *S*upplement relates to *T*wo right-angles, and, of course, the word Complement to one right-angle.

Or to use the Synthetic Method: "*Complement* (compliment)..praise bestowed..prize-winner..won..*one right-angle*" (*Complement* completes right-angle..*one*..*right-angle*) or "*Supplement*..supple..bend double..'two double'.. *two right-angles*" (*Supplement*..added to..more than one right-angle..*two right-angles*).

1. What is every correlation? 2. Does Analysis ever make a correlation? 3. Why would not "A" make a good In. by sound with "Anchor" on preceding page? 4. Is the method of remembering by accidental coincidences always reliable? 5. If not, why? 6. Are there cases where it cannot be used? 7. Make an original correlation between "Mitral valves" and "left." 8. How does the accidental coincidence in connection with the University crews compare with Synthesis? 9. Does this method make an impression on the novice at first? 10. Does the novice adhere to it? 11. Why?

I could give many other illustrations of the narrow scope of this Method of Accidents, though *genuine within that scope*, and how, in *all* cases, by the Synthetic Method we can find in the facts *to be remembered* the means of their recollection. One case more: In regard to memorising the statement that "the Posterior Nerve of the Spinal Column is Sensory, and the Anterior Nerve is Motor," using this Method of Accidents, "You observe that Posterior and Sensory go together, and that Anterior and Motor go together. The initial letters of Posterior and Sensory are P and S, and the initial letters of Anterior and Motor are A and M. By considering that A and M are in the upper part of the Alphabet and P and S are in the lower part of it, you will be sure to remember that Anterior is associated with Motor and Posterior with Sensory." I admit that the *first time* one hears this elaborate method applied the novelty of the principle of it might make an impression; but, after that, the method would probably fail from its lengthy exposition; because it is difficult to retain the *steps of an argument* in a weak Memory and therefore such a method cannot certainly act as a *Means for Aiding* the Memory. How do I manage this case? By correlating Posterior to Sensory, thus: *Posterior* .. Post-Mortem .. Insensible .. *Sensory*; or Anterior to Motor, thus: *Anterior* .. Ant .. disturbed ant-hill .. commotion .. *Motor;* or *Anterior* .. antediluvian .. rush of water .. water-power .. *Motor.* In uniting the two unconnected "Extremes" together by means of a *developed Analysis memorised*, the Natural Memory is aided in a very high degree.

By MEMORISING a Correlation, you so unite the two EXTREMES in memory, that you need not afterwards *recall the intermediates.* The intermediates drop out of the memory by what Prof. E. W. Scripture, Psychologist, of Yale University, calls the Law of Obliteration.

1. Why does the method fail? 2. Is it difficult to retain the steps of an argument in the natural memory? 3. Can you give any instances in your own experience where Analysis has helped you to cement Extremes together? 4. Can such a method act as a means for aiding the memory? 5. How would I manage the case spoken of?

HOW TO MEMORISE A CORRELATION.

To memorise a Correlation you must *at first*, if your *Natural Memory be weak*, repeat from *memory* the intermediates forwards and backwards, as :—ANCHOR . . *sheet-anchor* . . *sheet* . . *bed* . . BOLSTER—BOLSTER . . *bed* . . *sheet* . . *sheet-anchor* . . ANCHOR, at least three times each way. These six repetitions from memory, three forward and three back, are only required *at first.* In a short time you will infallibly remember every Correlation *you make ;* at last, the memory will become so strong, that you will no longer have to make Correlations at all. After you have repeated the Correlation, then repeat the two extremes, thus—" Anchor " . . " Bolster." " Bolster " . . " Anchor." " Bolster ". . " Anchor." " Anchor ". ." Bolster."

Nothing else is so easy to memorise as a Correlation, for a Correlation is not a " mental picture " or " story "—it is neither a proposition, sentence or phrase. It has no rhetorical, grammatical, argumentative or *imaginative* character. It is simply an elemental primordial Psychological Sequence of Ideas in which one includes another, excludes another, or in which one idea has been so often or so vividly united with another in past experience that the two are inseparably connected in memory—and a little practice in making and *memorising* these Correlations soon makes it *impossible* to forget them.

ASSIMILATIVE ASSOCIATION AND MEMORY.

Probably no psychological mistake was ever fraught with greater injury to the cause of public or self-education than the too prevalent opinion amongst teachers generally that " physiological retentiveness " is the memory's sole reliance *in all stages of life.* It is nearly the sole reliance in infancy, and a partial reliance in youth. But when an

1. What is the result of uniting two unconnected " Extremes " by means of a developed Analysis? 2. What are the first steps in memorising a correlation? 3. How long are these repetitions required? 4. What will be the result in a short time? 5. What will be the final result? 6. Are correlations easy to remember? 7. What is the result of making and memorising them? 8. When does the most vivid concurrence take place?

accumulation of experiences and a fair command of language have been gained, new acquisitions are henceforward principally made by *the affiliation* of one idea upon or with another or *the making of associations between ideas already established.*

And, if this be so, then memory must be very greatly improvable, since no mental power is susceptible of so much improvement as assimilative association.

A good memory, whether natural or acquired, belongs to quick and vivid *associability* and *revivability* rather than to mere inherent and perpetual physiological *record making.*

After a certain number of experiences the child learns the appearance of a square. All his future experiences, however varied, of squares become affiliated upon, or connected with the record of this original square. If each new square had to be separately impressed on the brain as a distinct and independent physiological record, it would take as much time and trouble to learn every new square as it did to learn the first square. But the *instant* recognition of every square after learning the first one shows that the old brain record is used in the case of each new experience of squares or that the new square is interpreted by the old or original record through the Laws of Association. Again: Taking the prefixes *com.*, *de.*, *im.*, *op.*, *re.*, *sup.*, &c., which are used in thousands of cases, and the suffixes *ment*, *sion*, *ible*, *ibility*, &c., also used in thousands of words, and using these in connexion with the root word "Press" we have compress, depress, impress, oppress, repress, suppress, and also compressible, depression, re-impress, suppression, impressment, &c.

Must a new physiological record be made for each form of the sixty or more words of which Press constitutes the base, and must a new record be also made for each of the prefixes and suffixes in the thousands of combinations in which they occur? No one believes any such absurdity.

If space permitted it would be easy to offer additional considerations tending to show that after infancy and early youth new acquisitions are mainly made by combinations and recombinations of ideas already possessed, and not by new and independent records physiologically reimpressed on each occasion.

RULES FOR MAKING CORRELATIONS.

1. Never make a correlation except in conformity to In., Ex., and Con. Carelessness here is fatal to success.

2. When the pupil reads a correlation of mine, he should indicate the relations between the words by writing in the figures 1, 2, or 3, and he should pursue the same course with his own correlations.

3. Ofttimes "extremes" are in different planes of thought, so occasionally three intermediates are necessary to cement them; two are often required; but after considerable practice in making correlations one usually suffices.

4. A correlation is a *successive advance*, and an intermediate must not refer back to any except its *immediate* antecedent, never to its second or third antecedent. A pupil wrote: — *Short steps* ... stepson ... real son ... more a son ... *Morrison.* Here, "more a son" refers to the comparison between "real son" and "stepson," but the latter is the second antecedent so the correlation is a defective one. He might have said: *Short steps ... stepson ... Morrison.*

5. A word may be used twice but never three times. *Pen* ... pensive ... gay ... nosegay ... *Nose.* Here "gay" is properly used twice, and after that, it is dropped and you can go on with the rest of the word, to wit, *nose.*

6. A compound phrase including a verb is rarely allowable, since the intermediates must be the simplest elements, either sensations or perceptions [relations among sensations] or abstractions [relations among relations], or one of these with either of the others, always exemplifying either In., Ex., or Con.

7. My correlations are good for me, but they may not be so vivid to others, especially where the concurrences are used. To fix the date of Magna Charta (1215), the pupil could memorise this Correlation—MAGNA CHARTA. . .

1. What is fatal to success in making correlations? 2. What do the figures 1, 2, and 3 indicate in Rule 2? 3. How many intermediates should there be?

King John. . . Jew's teeth. . . DeNTaL. But if the pupil did not know *before* that King John had granted that charter, and if he did not also know the story about the extraction of the Jew's teeth to make him pay the royal exaction, there would be no concurrence as to the first word and second, or second and third, and if he learned the Correlation it would be by mere repetition without aid from Analysis. In such a case he would make and memorise his own Correlation, perhaps thus: MAGNA CHARTA ... magnify ... diminish ... DwiNDLe. When a pupil makes his own Correlations, every concurrence he uses is a *real* concurrence to him, and so with his Ins. and Exs. This is a decisive reason why the Pupil should merely look upon my Correlations as models, but make and memorise his *own* Correlations in all cases, as being more vivid to *him* and, therefore, more certainly remembered, as well as more effectively strengthening the Memory in both its stages.

8. Vivid Ins. by *meaning* are better than Ins. by S. (the latter when used, should be as perfect as possible). EAR . . EEL makes a weak In. by S. to some persons, but it would make a much more vivid first impression to most persons to deal with them in this way: EAR . . (w)ring . . twist . . wriggle . . EEL. But "Bivou*ac* . . *aq*ueduct" is a perfect In. by S. as to the last syllable of the former and the first syllable of the latter, since those syllables are pronounced exactly alike. We may connect Bivouac to Rain thus: "*Bivouac* . . aqueduct . . flowing water . . falling water . . RAIN."

9. *Never*—in the early stages of the study of the System—make a *second* Correlation until you have *memorised the first.*

10. Although *making* and *memorising* Correlations serves the useful purpose of fixing specific facts in the memory, yet the MAIN OBJECT in making and memorising Correlations is to develop the latent power of the Natural Memory to such a degree that all facts are hereafter remembered without the aid of conscious Correlations.

11. Never try to find *analytic* date or number words until you *know the material facts connected with the date or number* before you. The student wishes to fix the date of

Voltaire's birth, in 1694. "The Shaper" and "The Giber" occur to him. If he is ignorant of the facts of Voltaire's life, he will correlate thus: "*Vol*taire . . (1) . . volatile . . (2) . . 'fixed' . . (1) . . 'The Shaper' *The Shaper* (1694);" or "Vol*taire* . . (1) . . tear to pieces . . (1) . . mocking dissector . . (1) . . *The Giber* (1694)." If he had known that Voltaire was a born writer, he would have found the analytic relation in "Voltaire ... *The Shaper* (1694)" or if he had known that he was a terrible mocker, he would have said: "Voltaire ... *The Giber* (1694)." If he wished to fix the date of the discovery of America, he might think of "*Terrapin*" (a large tide-water turtle, abounding in Maryland), and correlate thus: "Discovery of America ... (1) .. Maryland . . . (3) . . . *Terrapin* (1492)." But if he remembers that Con. covers all cases of Cause and Effect, Instrument or Means to End, Person by whom, &c., and if he reflects that this discovery has been a blessing to the Old as well as the New World, he would say: "Discovery of America . . . (3) *True Boon* (1492)." Or, if he considers that the moment America was made known to Europe the whole of the Western Continent was open to every new-comer, he would find analytic date-words thus: "Discovery of America . . . (3) . . . *Door open* (1492)." If he merely wants to fix the fraction 92, he could use the first two consonants of the name of one of his ships, and say: "Discovery of America . . . *Pin*ta (1492)."

ISOLATED FACTS.

Correlate an *Isolated Fact* to something (to some fact in its environment or *entourage* that is BEST KNOWN and) which you are sure to THINK OF when you wish to recall the Isolated Fact.

HOW TO REMEMBER PROPER NAMES WHEN INTRODUCED.

An infallible method of remembering proper names is (1) Get the name when introduced. If not quite sure, ask for it. (2) *Pronounce* the *name aloud* whilst *looking at* the

person. Do this several times, if possible. The object is to produce a concurrence or connection between the *sight-image of the Person* and a *sound-image of his Name.* (3) To help the ear for sound, always pronounce everyone's name aloud whenever you meet him. This helps nature. These directions carried out never fail to make a pupil perfect in remembering proper names.

To remember PROPER NAMES in the absence of the person, correlate the Person's Name to the name of some Peculiarity of the Person (as the BEST KNOWN and) which you are sure to THINK of whenever you think of the Person. If you *memorise* the Correlation, you will recall the Name whenever you think of this Peculiarity (whatever struck you about him).

To remember a proper name, Mnemonists resort to In., by S. But this *alone* gives no starting point, no "Best Known" which you are certain to think of, and which will enable you to recall the name, *provided* you cement by a memorised Correlation the "Best Known" to the name itself; in fact, a similarity of sound *alone* and *by itself* is likely to mislead you into reviving itself instead of the name. A celebrated Member of Parliament (who in the days of his youth, before he had greatly tested Mnemonics, gave a high opinion of its value) was to deliver an address at the Birkbeck Institution, some years ago. Having difficulty in remembering proper names, he thought he would *fix* the name of its founder in his memory by the Mnemonical device of finding a word that sounded like it; he said to himself, "It reminds me of 'Pinchbeck.'" He commenced as follows: "Before coming to the subject on which I am to speak this evening, I desire to pay a deserved tribute of praise to the founder of this great Institution, the celebrated Mr. PINCHBECK." A shout of laughter revealed to him that Mnemonics may get us into trouble, and fail to help us out: he could not remember the real name, Birkbeck, until it was told him. If he had mastered this System, his NEW memory-power would have enabled

1. To what must we correlate a person's name? 2. What will be the result if we memorise the correlation? 3. To what do Mnemonists resort to remember proper names? 4. Does this *alone* give a starting point? 5. What is a similarity of sound alone likely to do?

him to remember the true name *without any device ;* or, if he was but a beginner at my System he could have remembered the name Birkbeck—which he was afraid he would forget—by correlating it to the word—" Founder," which he did remember, thus :—FOUNDER...lost way...hark-back ... Birkbeck ; or, FOUNDER ... foundered horse ... chest-nut horse...chestnut...bur...BIRKBECK. If he had memorised either of these Correlations, or one of his own, by repeating the intermediates forwards and backwards two or three times, and then recalled the two extremes, " Founder," " Birkbeck," several times, the moment he thought of Founder, he would instantly have recalled Birkbeck, one extreme recalling the other without the intermediates being recalled. When one has received only a third of the benefit of this System as a Memory-TRAINER, the mere *making* of a Correlation ensures remembering two extremes together without thinking of intermediates.

[Dr. Johnson, when introduced to a stranger repeated his name several times aloud and sometimes *spelled* it. This produced a vivid first impression of the man's *name ;* but it did not *connect* the name to the man who bore it. People who have adopted the Johnsonian Method sometimes remember the name but apply it to the wrong person, because they did not establish any relation between the name and the man to whom it belonged.]

EXERCISES IN CORRELATING.

Make 20 of your own Correlations between faces and names (or between words and meanings), using some of the extremes given by me, and, as other extremes (words, &c.,

1. Is it ever possible to remember two extremes without thinking of the intermediates? 2. In what cases? 3. What did Dr. Johnson sometimes do when introduced to a stranger? 4. What sometimes occurs with people who have adopted the Johnsonian Method? 5. Why is this? 6. As Max Müller names mental acts in this order: Sensation, Perception, Conception, Naming, and Memory, would he hold that failure to remember names implies weakness of naming power? No! Remembering a name is an act wholly unlike imposing a name in the first instance. Such failure arises from weakness of the auditory function, or of the perception of individual peculiarities or failure of the sight-image to become cemented to the sound image.

of your own selection, or) names and faces of your own acquaintances.

Peculiarity.	*Correlation.*	*Proper Names.*
Cross-eyed	Cross-bow....bowman	Mr. Archer
Wavy hair	...dancing wave ...Morris dance	Mr. Morrison
Black eyes	white....snow....pure as snow	Mr. Virtue
Retreating chin	retiring....home-bird	Mr. Holmes
High instep	high boots....mud....peat	Mr. Peat
Crooked legs	broken legs ...crushed	Mr. Crushton
Apprehension	suspension ....gallows	Mr. Galloway
Sombre	sad....mourning....hat-band	Mr. Hatton
Music	stave....bar	Mr. Barcroft
Violinist	violin....high note....whistle	Mr. Birtwistle
Painter	paint....colored cards...whist	Mr. Hoyle
Plumber	plum-pudding....victuals	Mr. Whittles
Joiner	wood....ash	Mr. Ashworth

A CONTRAST.—When unconnected ideas have to be united in the memory so that hereafter one will recall the other, the teachers of other Memory Systems say: "What can I invent to tie them together—what story can I contrive—what foreign extraneous matter can I introduce—what mental picture can I imagine, no matter how unnatural or false the juxtaposition may be, or what argument or comparison can I originate—no matter how far-fetched and fanciful it may be, to help hold these 'Extremes' together?" They do not reflect that all these mnemonical outside and imported schemes must *also* be remembered, and that being in the form of sentences expressing loose relation of mere physical juxtapositions or the complex relations invented by constructive imagination or subtle intellect, they are, to most, more difficult to recollect than the extremes would be without these ponderous aids. Hence, in their professed attempt to aid the memory, they really impose a *new* and *additional burden* upon it.

On the other hand, I simply ask the memory what it *already knows* about the "Extremes." The first intermediate of a correlation is *directly* connected through In., Ex., or Con., with the first "Extreme," and the last intermediate with the last "Extreme," and the intervening intermediate (if there be one) with the other two, and thus, the *intermediates being already in the memory*, and not the result of invention or ingenuity, my Method of Correlation is purely

and solely a MEMORY process. In this way, I use the MEMORY TO HELP THE MEMORY, I use the *reviving* power of the memory to make a vivid FIRST IMPRESSION between two hitherto unconnected "Extremes." I add nothing to the "Extremes," import nothing from abroad in regard to them, invent nothing. I simply *arouse*, *re-waken* to consciousness, *what is already stored away* in the memory in regard to those "Extremes," and, by reciting the Correlation a few times forwards and backwards, cement the "Extremes" themselves so vividly together, that henceforth one "Extreme" revives the other "Extreme" without the recall of the intermediates.

And in the chapter on Recollective Analysis, and also in the previous part of this chapter, I have given the attentive student such a familiarity with the Memory Laws of In., Ex., and Con., that he can make Correlations as easily as he breathes.

When learning prose or poetry by means of endless repetitions to acquire, and endless views to retain, the mind soon wanders, and thus discontinuity is promoted; but, in reciting a Correlation forwards *and backwards* from memory, the mind cannot wander, and thus the continuity is greatly strengthened. Again, memory is improved by exercise, and *improved in the highest degree* by *making* and *memorising* correlations, because in *making* them the *reviving* power of the memory is exercised in conformity to Memory's own laws; and in *memorising* the Correlations both stages of memory are most vividly impressed. Thus, making and memorising the Correlations TRAINS both Memory and Continuity. And if to this training process there be added the habit of Assimilation which the use of the Analytic-Synthetic and Interrogative Analysis Methods of learning Prose and Poetry by heart imparts, as well as my other training methods, then the NEW memory thus acquired *will not demand the further use of the System any more than the adult swimmer will need the plank by which as a boy he learned to swim.*

1. Are you required to make any original correlations? 2. How many? 3. Between what extremes? 4. Do you find it difficult? 5. Have you any evidence given here that others have experienced any difficulty in making them? 6. Did they finally succeed? 7. What question is frequently asked by other memory teachers?

LEARNING FOREIGN WORDS.

"The Guide to Memory, or a New and Complete Treatise of Analogy between the French and English Languages," compiled by Charles Turrell, Professor of Languages, and published in 1828, contains the words which are the *same* in each language (alphabet, banquet, couplet, &c.), and those almost the same—"Letters necessary in English, and superfluous in French, are included in a parenthesis, thus Bag(g)age. Letters necessary in French, and superfluous in English are printed in Italics, thus Hom*m*age." At first sight it seems as if this plan were a good one (and some still recommend it*). But of the words which are the same in both languages, some of them have meanings one rarely if ever needs to express, while others are seldom seen except in Dictionaries, so the student who uses this method does not make much *useful* progress. The Rev. W. Healy, of Johnstown (Kilkenny), long before he had finished my course of lessons, stated: "*I wrote out the French words that correspond to the English of everything around us and that are in common use, and found that by the aid of Rec. Syn. I could commit them much faster than the time taken to write them out.*"

The words he had made himself familiar with were those most frequently met with in reading, and useful in speaking and writing.

Mr. D. Nasmith employed a clerk in finding the number of occurrences of the same word in three books. Some words occurred thousands of times, and others only five, or fewer. The words which frequently occurred he arranged

1. What new burden do they impose on the memory? 2. What do I require from my pupils? 3. To what is the first intermediate connected? 4. Through what? 5. How do I deal with the other intermediates? 6. What is a memory process? 7. Is the memory used to help the memory in any way? 8. Do I add anything to the extremes? 9. Is memory improved by exercise? 10. When is the System laid aside?

* The "New Memory-Aiding French Vocabulary" by Albert Tondu, published by Hachett et Cie, London, in 1881, is a somewhat similar work to Charles Turrell's.

in order, the commonest first, and compiled exercises to suit them. His "Linguists" (German and French) are published by Mr. D. Nutt, of 270, Strand, London, and by the aid of them, and of my System, a useful knowledge of German (or French) can be rapidly acquired.

A pupil who had a very slight acquaintance with French learned an Analytic Series of French words, asking a French friend the meaning and pronunciation of the words unfamiliar to him. By doing this he in about an hour learned the spelling, pronunciation, and meaning of nearly 100 French words. Since then he has been extending the exercise, and in that way he has learned 1,000 French words. In doing so he is strengthening his memory by exercising it in accordance with its own laws, increasing the control his will has over his attention, and extending his French vocabulary.

To remember Unfamilar English Words or FOREIGN WORDS, correlate the Definition as the BEST KNOWN to the Unfamiliar or Foreign Word, and memorise the Correlation. In the case of Foreign Words, the last Intermediate is necessarily a case of Inclusion by sound. Sometimes there is In. by sight or by sound between a part or the whole of the English word, and a part or the whole of its Foreign equivalent, as *Ap*ple—*ap*fel [German]. Of course, the pupil will not need the aid of a correlation in such cases if he notice the analytic relation. The French word *Anachorète* might have for its equivalent by sound either "*Anna*," or "*Core*," or "*Ate*," or "*Anna goes late*," or "*Ann a core ate*," or "*Anna's cold hate*," and perhaps to some of my readers it would seem like something else. *Cravache* might sound like "*Crack of lash.*" Pupils often disagree as to what is good Inclusion by sound; let each use what suits himself, and not trouble about other people's ears. *In. by sound, or by sense, or by spelling*, is sufficient even if it refers to *only one syllable.*

1. Do we ever see words spelt differently but with the same pronunciation? 2. Is the use of the Dictionary required? 3. What examples have we here of the benefits derived from Rec.-Synthesis? 4. With what words did he make himself familiar? 5. Does the same word frequently occur in a book? 6. What proof can you mention? 7. What task was accomplished in about one hour by one of my pupils? 8. What language was he studying?

ENGLISH.	INTERMEDIATES.	GREEK.
Merchant	market	emporium	ἔμπορος
Move	move on	next stage	next-of-kin	κινέω
True	naked truth	pith of the matter	pithy	πιθανος
Course	coarse hair	camel hair	dromedary	δρόμος
Servant	light fare	dole out [maid	bride	dowry]	δούλος
Tanner	leather	leather purse	disburse	βυρσεύς
Cup	tea-cup	tea-pot	ποτήριον
Fetters	criminal	desperate	δεσμος
Fragile	thin	rapier	"thrust us"	θραυστος
—	glass houses	"throw stones"	—
Fruit	fruit-knife	fish-knife	carp	καρπος
Round	fat	stout	strong	στρογγύλος
Bride	fair	fairy	forest nymph	νυμφη
Pearl	Necklace	sweetheart	Sweet Margery	μαργαρίτης
Bread	baker	baker's art	ἄρτος
Marry	lottery of life	risky game	γαμέω
Join	engaged—[suited	apt]	apt to disagree	ἅπτω
Culprit	cull	select a few	few gone	φευγών
Milk	milky way	galaxy	γάλα
Drink	water	small leak	pinhole	πίνω
Suffer hunger	dying of hunger	pining away	πεινάω
Time	watch	chronometer	χρόνος
—	Father Time	old age	old crony	—
Deliver	capture	lasso	ἀπαλασσω
Spread	Christmas feast	deck a church	dye a spire	διασπείρω
Uncover	bare	bare foot	a Kaliph's toe	ἐκκαλυπτω
Shut	shut out	severe weather	bad climate	κλείω
I judge	condemn	refute	refuse	cry "no"	κρίνω
Found	establish	fix	fasten thus	tie so	κτίζω
Soldier	art of war	strategy	στρατιώτης

	LATIN.
Heart	heart-sick	fainting	cordial	cor
Wickedness	dishonesty	blackmail	malum
Book	printed thoughts	freedom of thought	liberty	liber
—	books	library	—

1. In the case of Foreign words, what must the last intermediate necessarily be a case of? 2. Do pupils always agree on a good In. by S.? 3. What is sufficient, if it refers to one syllable only? 4. What are you never to do in getting at an English word? 5. What may you do in getting at a Foreign word? 6. Could you not omit "camel hair"? 7. Could you not omit "leather," which follows "tanner"? 8. Could you not omit after "cup" the word "tea-cup"? 9. Is not "tea-pot" connected by Con. with "cup"? 10. After "bread" could you not omit "baker"? 11. Are not "bread" and "baker's art" connected? 12. Could you not omit "watch," after "Time"?

ENGLISH.	INTERMEDIATES.	LATIN.
Breast	front...front view...aspect	pectus
Spear	thrust...quick motion...hasty	hasta
Suitor	princely suitor...married by proxy	procus
Ask	borrow...swindle...rogue	rogare
Marrow	Old English arrow...victory...medal	medulla
Captain	head of hundred...century	centurio
Surveyor	measure...dimension	agrimensor
Furniture	bent-wood chairs...bent legs...supple legs	supellex
Vine	wine...luxury...pampered	pampinus
Liar	false pretence...mendicant	mendax
Cow	cow-pox...vaccination	vacca
Sing	boatman's song...canoe	cano
Kill	kill by hanging...broken neck	necare
Redden	blush...kissing...ruby lips	rubesco
—	red...ruby	—
Dry	dry mouth...feverish...sick	siccus
Man	married man...home	homo
War	victory...rejoicings...bells rung	bellum
Rob	robber...hue-and-cry...policeman's rap	rapto
Tanner	russet leather...russet apple...apple core	coriarius
Dove	married love...United States...Columbia	columba
Bench	table...shop counter...selling	subsellium
Oar	Roman galley...Rome...Romulus and Remus	remus
Garret	unhealthy...medicine...salts and senna	cenaculum
Garret	store-room...grain store	granaria
Horse	race...dead heat...equal	equus
Cock	spurring...goading...galling	gallus
Lazy	tramp...knave	ignavus
Make heavy	rich food...gravy	gravo
Sign	musical signs...notes	nota
Poverty	drafty garret...sleeping draught...opium	inopia
Messenger	news...false news...nonsense	nuntius
Top	high perch...hen's perch...cackle	cacumen
Face	bare face...bare headed bird...vulture	vultus
Useless	needless impatience...irritation	irritus
Dark	dark staircase...insecure	obscurus
Writer	bad writer...scribbler	scriba

1. If "mendicants" are known to be liars, why could not "false pretences" be omitted? 2. If "vaccination" means inoculating with "cowpox," why could not "cowpox" be omitted? 3. If "broken" neck means a violent death, why not omit "kill by hanging"? 4. Ought not "billing and cooing" to be inserted after "Dove"? 5. What relation is there between "married love" and "United States"? 6. If "musical" be added to "notes," why could not "musical signs" be omitted? 7. If "scribbler" is a writer, why could not "bad writer" be omitted?

ENGLISH.	INTERMEDIATES.	LATIN.
Harvest	harvest home . . . " Mrs. at home ? "	messis
Dog	dog's tail . . . . . tin can . . . . . [cane carrier . . . . cane *]	canis
Egg	boiled egg . . . . boiled hard . . . . over boiled	ovum
Fox	jackall . . . . carcass . . . . vulture	vulpes
Bread	sweat of brow . . . . labour . . . pain [bread-pan . . . . pan *]	panis
Table	figures . . . . calculation . . . . mensuration	mensa
Master	schoolboard . . . . fines . . . . magistrate	magister
Tree	mast . . . . ship . . . . harbour	arbor
Mother	wife . . . . helpmeet . . . . help-mate	mater

				GERMAN.
Joy	play-day	free day	Friday	Freude
Sad	tomb	mason	trowel	traurig
Clear	clear tones	clarionet		klar
Indolent	" lazy bones "	lazy lass		lässig
Dangerous	storm	steamboat fare		gefährlich
Part	part of house	roof	tile	Theil
Empty	hollow	fox's hole	lair	leer
Take	take husband	new name		nehmen
Diffidence	shy girl	schoolgirl	Miss	Misstrauen
Little	grow less	on the wane		wenig
Much	more	mourn	feel grief	viel
Recompense	repayment	loan		Lohn
Question	answer	fragmentary answer		Frage
Foot-stool	low	shame		Schemel
Pressure	too heavy . . .	droop		Druck
Voice	voice lozenges	stimulation		Stimme
Child	young kindred			Kind
Threaten	stinging words	stinging bee	drone	drohen
Mirror	reflect	think	speak	Spiegel

1. Could not " boiled hard " be omitted? 2. If we use " mensuration tables," could not " figures . . calculation " be spared? 3. What is the relation between " Tree " and " mast "? 4. Could not " lazy bones " be omitted after " indolent "? 5. Why could not " schoolgirl " be omitted? 6. Why could not " answer " be omitted after " question "?

* In some English schools the first syllable in " panis " sounds " pan," in others " pain." If an English word derived from a foreign word (or from the same root) occurs to you, use it; but do not spend time hunting for derivations. Unfamiliar words are no help; do not think the word " panification " will help you to " panis," because it is an English word meaning " bread-making," and you are an Englishman. You would be much wiser to try to remember the English " panification " by the aid of the Latin " panis," than *vice-versa*, that is, if any mortal ever does want to remember that pedantic dictionary word.

ENGLISH.	INTERMEDIATES.	GERMAN.
Beetroot	red heart . . . rib	Rübe
Potato	dig up . . . . remove . . . . cart off	Kartoffel
Love	lovers' meeting . . . meat . . . Liebig's extract . . .	Liebe
Campaign	pain . . . feel . . . . felt	Feldzug
Medicine	science . . . . arts	(*pr.* artsnei) Arznei
Evening	hour of prayer . . . . bend the knee	Abend
Heaven	angels . . . . harps . . . . hymns	Himmel
Song	choir . . . choir leader . . . . lead	Lied
Table	soiled table cloth . . . . dirtyish	Tisch
—	dinner . . . . dish	—
Chair	chairman . . . . session	Sessel
Bottle	Leyden jar . . . electric spark . . . . flash	Flasche
Beloved	attached . . . . hooked . . . . trout	traut

ENGLISH.	INTERMEDIATES.	FRENCH.
Fat	Fat ox . . . . clover . . . . rich grass	gras
Mouth	Flesh eater . . . . butcher	bouche
Asphalt	assafœtida . . . . fish bait	béton
To lash	circus . . . . Hengler	cingler
Current	nerve current . . . . vague function	vagus
Armchair	reclining . . . . gouty . . . . foot oil	fauteuil
—	arm . . . . leg . . . . foot	—
Railway station	railway guard . . . . guard	gare
Smoke	tobacco . . . . smell . . . . perfumer	fumer
Carpet	fine design . . . . tapestry	tapis
Head	foot . . . . root . . . . potato	tête
Oar	boat . . . . war-ship . . . . ram . . . . [See Latin]	rame
Tears	hysterics . . . . fainting fit . . . . alarm	larmes
Canvas	rope . . . . oakum . . . . hard labor . . . . toil	toile
Wave	washing . . . . unwashed . . . . vagabond	vague
—	current . . . . nerve current . . . . vagus	—
Bed	bed of sea . . . . sea-shore . . . . lee-shore	lit
Pane	pain . . . . sore eyes . . . . vitriol	vitre
—	glass . . . . vitreous	—
Gun	gunsmith . . . . spark . . . . fusée	fusil
—	foot soldier . . . . fusilier	—
Shovel	shoved about . . . . crowd . . . . Pall Mall	pelle
—	sand . . . . spade . . . . pail	—
Side-walk	walking fast . . . . trotting along	trottoir
—	mid road . . . . horses . . . . trotting	—

1. Why could not "feel" be left out? 2. Why not omit "science," and say "medical arts"? 3. Why not omit "angels" and "harps," and simply add "celestial" to "hymns"? 4. If the pupil does not know who "Hengler" is, should we not omit the name and insert instead "singing clown"? 5. Why should not "fare" be a better In. by sound with "gare" than "guard"? 6. If tapestry means other things besides carpets, would not "tapestry carpet" be a sufficient intermediate? 7. If "pelle" is pronounced as if applied "pel," ought not "Pall Mall" to be pronounced as if spelled "Pell Mell"?

ENGLISH.	INTERMEDIATES.	FRENCH.
Dirty	second-hand furniture...furniture...sale	sale
Faithful	dog-blind fiddler....fiddle	fidèle
—	....faithfulness....fidelity	—
Pity	pitying....misery	miséricorde
Misfortune	missing train....mail hour	malheur
Hang fire	...fire engine...." haste "....tear along too	faire longfeu
Star	diamond....ball dress....toilet	étoile
—	Star.....Inn....hotel	—
Cake	cheesecake....mouse....cat	gateau
Sword	soldier....soldier's pay	épée
—	.....war....misery....happy	—
Book	pages....leaves....[See Latin]	livre
Castle	ruined....shattered	château
To speak	converse....dispute....parley	parler

	ITALIAN.
Basket.....horse-basket....pannier	paniéra
" .....casket....ring....bull....bellow	corbello
Gold.....nugget....ore	óro
His.....his own....zone....bind....sew	suó
Thy.....thy face....head....foot....toe	tuó
Uncle....." Dutch uncle "...Holland...Zuyder Zee	Zio
Pius.....church....pew	Pio
Month.....Month of May....mace	mése
Made.....servant-maid....cook....fat	fátto

Synonyms, as well as words having but a slight difference in sound like *Insidious* and *Invidious* are easily discriminated by *memorised* Correlations: INSIDIOUS.....inside.....hole.....fox.....TREACHERY.—INVIDIOUS.....invade.....hostility.....ILL-WILL.

HOW TO MEMORISE DATES, &c., WHERE YOU ARE UNFAMILIAR WITH THE FACTS, &c.

Let every Pupil write examples of his own selection of names Correlated to Dates of birth and death worked out

1. Is the letter "i" in Zio pronounced as if spelled Zeeo? 2. If so, is "pew" a good In. by sound with Pio? 3. Why would not these be good correlations, viz., INSIDIOUS, hideous...moral turpitude....TREACHERY.—INVIDIOUS..perfidious..betrayal..ILL-WILL. 4. How many correlations have you made so far? 5. Have you made your own in every case, or memorised mine in every case? 6. Have you indicated the relations in all cases by writing in 1, 2, or 3? 7. If not, why not?

as below, or some other *pairs* of extremes, such as name of ship to its captain on one side, and its tonnage (or destined port) on the other.

To remember *Dates* of *Birth* and *Death* (&c.) of men, correlate the SURNAME AS BEST KNOWN to the word expressing the date of BIRTH, and correlate the BIRTH-WORD to the DEATH [&c.] word:—

Do not look for Analytic Date-words in the following cases until you have first memorised my Correlations or your own. You can then review the examples and easily find Analytic Date-words if you are *sufficiently acquainted* with the facts of the cases, as: Lord Beaconsfield (18)05, *Sa*lient.* Here is a supposed Analytic formula by English Liberals, of Gladstone's birth:—Gladstone—"*Su*preme" (18)09; by Foreigners—"*Su*pereminent;" by Tories, "*Sp*oliator;" by Home Rulers—"*Su*pporter;" by Parnellites—"*As*perser;" by Churchmen—"*Sp*iritual;" by Agnostics—"*Su*perstitious;" by Unionists—"*Se*paratist;" by admirers of eloquence—"*Sp*ellbinder;" by decriers of speaking—"*Sp*outer."

Lord Beaconsfield....beacon....the rock....*th*e *vessel* [born 1805]
....Vessel ...anchor....hope....*to* ha*ve* *faith* [died 1881]
Mr. Gladstone....gladness....sorrow....*th*e heav*y* *sob* [born 1809]
....heavywaters....Noah's flood....few saved.....*too* *few* *men* [M. P. in 1832]
Napoleon Bonaparte....banishment....embarkation ..... *Took ship* [born 1769]
....Took ship....masthead....Godhead....*Divinity*....[died 1821]
Robert Burns....Scottish poet....map of Scotland ...map of the World....*The* *globe* [born 1759]
...." The Globe "....newspaper....page....Wai*ting* *page*....[died 1796]
Oliver Goldsmith....poverty....plenty....*Took* *enough* [born 1728]
...." bread enough "....prodigal son....*The* *younger* [died 1774]

1. Memorise the correlation you make. 2. Do you find it difficult to get analytic date-words? 3. What is necessary in order to get them readily?

* One of the meanings of "Salient" is "to force itself on the attention." Recall his threat when coughed down on the occasion of his maiden speech in the House of Commons. "You will hear me" (18)05.

Nelson....Britain's bulwark....White *cliff* [born 1758]....White *fossil* [died 1805]
Cardinal Wolsey.....butcher.....steel.....straight.....*Direct* [born 1471]
....point....horns.... *Dilemmas* [died 1530]
Cardinal Newman...."kindly light" *Vesta* [born 1801]
....fire goddess ...sun god.... *Phœbus* [died 1890]
The Marquis of Salisbury....St. Paul's burial ...*The famous* [born 1830]
The famous....Livingstone....travelling....*voyaging* [succeeded to title 1867]
J. J. Rousseau...."Emile"....early education....*Educate* now [born 1712]
....draw out thought.... I *think of* you [died 1778]
Charles Darwin....."Natural Selection".....The chosen one..... *Happy* [born (180)9]*
....greatest happiness.... *To* have *heaven* [died 1882]
George Eliot....Adam Bede....add.... *Advance* [born 1820]
....Money....£10.... *Two fives* [died 1880]
Richard Wagner...."Music of Future"....future time. ...*To* have *time* [born 1813]
To have *fame* [died 1883]
The Duke of Albany....delicate....pale....white.... White *flame* [born 1853]
Fire [died (18)84]
Charles Dickens...."Pickwick Papers"....picnic biscuits....biscuit-tin....*Tin* [born (18)12]
Case [died (18)70]
Titus Oates...barley...mash-tub...man's tub...*Diogenes* [born 1620]
....harsh critic.... He *attacks all* [died 1705]
The specific gravity of the Iridium is 22·40 **22·40**
IRIDIUM....I ridicule....Ridiculous....All laugh.... *none serious*,

1. Is it always necessary for us to know the dates of the birth and death of men? 2. Then why do we do this exercise? 3. What do I want you to get thorough control over? 4. What will you then be able to do? 5. The specific gravity of Iridium is 22·40, represented by the phrase *none serious*; of what use is the first "s" in the word "serious"? 6. Why would you not give it the value of (0)? 7. Give a phrase indicating the height of the Washington Monument (555 ft.). 8. Now correlate "Washington Monument" to the phrase you have given. 9. Make original correlations for all the events on this page. 10. Are unfamiliar words of any help in a correlation? 11. Should they ever be used as intermediates? 12. Do you try to use as few intermediates as possible? 13. Are short ones more easily learned?

* It is sufficient to indicate the figure 9, as we know that it could not have been the year 9 of the Christian Era, and as it was somewhere about the beginning of this century, the figure 9 makes an indefinite impression definite and exact.

See Analytic Substitutions, concerning the expression of decimals.
One pound avoirdupois equals .45355 of a kilogram—
POUND AVOIRDUPOIS....old measure....new measure....
new reign.. (·45355) His *rule* may hallow all
Great Earthquake at Lisbon in 1755— 1 7 5 5
LISBON....Listen....Hush !.. TALK LOWLY.
Sorata (Andes) 21,286 feet high. 2 1 2 8 6
SORATA ...sore....cured....salt fish.... UNEATEN FISH.
FOUNDATION OF ROME...Seven hills...up hill...(753) *climb*.
FIRST PRINTING IN ENGLAND....Book....Pamphlet....
(1471) *tract*.
COUNCIL OF TRENT.....rent...rent roll.... (1545) *daily roll*.
SPANISH ARMADA DESTROYED 1 5 8 8
Many ships sunk....few escaped....THEY LEAVE A FEW.
America discovered in 1492— 1 4 9 2
AMERICA....Merry....Sad...sad irons...Handcuffs...TURPIN.
Mariners' Compass invented, 1269— 1 2 6 9
MARINERS' COMPASS... pocket compass— TINY SHAPE.

Learning dates and other figures by Synthesis is never recommended except where the pupil is ignorant of the subject matter and cannot in consequence use Analytic Substitution. Synthesis power has a good training effect in all cases.

SERIAL FACTS.

There are two kinds of Serial Facts.

(1) One is where names or facts are stated in a certain order, as in alphabetical order, for instance, and yet a different order could be given. Lists of exceptions in Grammar are usually stated in the alphabetical order, yet if the component parts or words of the list are remembered, the alphabetical order is of no consequence. One teacher has re-arranged Series in Foreign Grammars in such a manner that he finds a natural suggestiveness between the words. No doubt such a re-arrangement can be made, but I question whether his doing it for another would help the latter much. For the pupil to benefit, he should re-adjust the Series for himself. My Pupils, when trained in Analysis and Synthesis, have no difficulty in correlating the Series just as they may find it. No time is spent in trying to discover relations that may not exist.

1. How many kinds of Serial facts are there? 2. What are the characteristics of the first kind? 3. Is it advisable for the pupil to re-adjust Series in Foreign Grammars?

At best, when found, they will be weak ; but, by correlating the series together, my Pupils make a strong and vivid relation between all of the words of a Series to be memorised, and at the same time exercise attention in both its functions, and increase appreciation of In., Ex., and Con.

Suppose we wish to memorise the 11 prepositions which form part of certain Latin verbs which are followed by the dative, to wit :—*Ad.*, *Ante.*, *Con.*, *In.*, *Inter.*, *Ob.*, *Post.*, *Pre.*, *Pro.*, *Sub.*, and *Super.* This Series is usually learned by *endless repetition*, as a succession of sounds to the ear, or sight to the eye, by mere *rote.* What a waste of time to attempt to re-arrange it in order to learn it more easily. Yet such a Series can be learned by correlating the words together in a very short time, thus :—

Ad.....addition....front addition....*ante*-room....
Ante.....antecedent....*con*sequent....
Con.....converse....*in*verse....
In.....
Inter.....interject....*ob*ject....
Ob.....obligation....*post*poned obligation....
Post.....post-office....*pre*payments....
Pre.....predilection....*pro*pensity....
Pro.....produce....soil products....*sub*soil....
Sub.....subordinate actor....*Super.*

And, similarly, we can deal with any Series in Grammar, or elsewhere.

(2) The other kind of Series is where the words, facts, or things *must* be memorised as given. The seven primary colours are given as they occur in nature, thus :—Violet, Indigo, Blue, Green, Yellow, Orange, Red. The unconscionable word VIBGYOR has been given as a means, through the initial letters of the colour words, to enable us to remember those words, and ROYGBIV to enable us to remember the Series backwards. To such a pass are educators driven when they lack my Universal Method of cementing Extremes. We know the Series both ways if we Correlate the words, thus :

1. Do my pupils ever find any difficulty in correlating the series as they may find it? 2. What training must they have in order to do so? 3. Is any time misspent in trying to discover a non-existing relation? 4. What are the eleven Latin prepositions here given? 5. How are they usually learned? 6. Is time gained thereby?

Violet.....let go....
Indigo.....indigestion...." blues"....
Blue.....blue sea....sea green....
Green.....green corn....ripe corn....
Yellow....yellow fruit....
Orange....orangemen....fights....blood spilt....blood-red....*Red*.

ORDER OF THE ENGLISH SOVEREIGNS.

The true Method of learning the Order and Dates of the English Sovereigns, as of the American Presidents, or of any other list of Rulers, is to deal with them only in the course of reading. When met with in History, all the facts are before the reader, and, if he fails to hold the *order of succession* clearly in mind in any case, he can easily correlate the Names together. And if he fails to retain some of the dates, he can readily make forgetfulness impossible by correlating names to date-words—or, as the details of the reigns are known to him, he can at once find analytic date-words. The reader wishes to infallibly remember that the date of the beheading of Charles I. was 1649. The formula is "Charles I.—*T*oo *sharp* (1649)." If the reader's memory-training is imperfect, and he is ignorant of the facts, he had better correlate. If his memory-education is complete, and the facts are within his knowledge, he will need no aid, or he will use analytic date-words as in above case (1) *Th*en (6) *Ch*arles (4) *r*ightly (9) *b*eheaded. If he feels that he needs some advice to help him remember the order of succession of the Kings, he can refresh his recollection by turning back and reading the method already given.

EXERCISE.—CASES IN EVERY-DAY LIFE.

The student must exercise his judgment as to what is the *best known* to which he will Correlate an *isolated fact.*

The following anecdote is taken from the ERA ALMANACK, 1882, p. 36. The actor, whose name was Taylor, could not remember the name assigned to him in his part of the play. We shall see how Mnemonics helped him.

ASSOCIATION OF IDEAS.—Macready was once victimised in *Virginius.* The Numitorius could not remember the

name given him in the play. "You will remember it, sir," said the tragedian, carefully pronouncing it for him, "by the association of ideas. Think of Numbers—the Book of Numbers." The Numitorius did think of it all day, and at night produced through "the association of ideas" the following effect :

Numitorius—"Where is Virginia? Wherefore do you hold that maiden's hand?"

Claudius—"Who asks the question?"

Numitorius—"I, her uncle—DEUTERONOMY!"

The actor should have correlated the word "Numitorius," which he could *not* remember, to the word "Uncle" as the BEST KNOWN that preceded it, which he could remember, or to his "cue" the word "Question" thus :

UNCLE [2] Nephew [1] You [1] You *knew*—NU-mitorius. *Or*,
UNCLE [2] Niece [1] Neat [1] Neat and New [1] *A new mitre o'er us* [1] NU-mitorius. *Or*,
QUESTION [1] Wants to know [1] Know [1] Knew [1] *knew my story* [1] NU-mitorius. *Or*,
QUESTION [1] Quest [1] Guessed [1] Knew [1] *Knew a mighty Tory* [1] NU-mitorius.

Had the actor memorised either of these Correlations, he would *not* have forgotten Numitorius in his performance. In all similar cases mere In. by sound, like the word "Numbers" which Macready proposed, and which is really *not a genuine In. by sound*, is of little service to a poor memory. A Correlation would have been much better.

To any conceivable "*Isolated Fact*" you can find a *Best Known* to which you can correlate it, and thereby always have it at command. This is true, even in cases of *anticipatory* memory. Instead of tying a string round your finger to remind you to buy something when you get to the bazaar, and when you get there forgetting to notice the string or forgetting what the string was intended to remind you of, correlate the name of what you wish to purchase to the name of something you are sure to *think* of at the place you are going to, and memorise the Correlation. When you see the *Best Known*, the thing you correlated to it will at once occur to mind. I will add only one more illustration :—A commercial traveller was in the habit of putting his watch under his pillow, and also in the habit of forget-

ting that he put it there! After losing two watches in this way, he came to me to improve his memory, and asked me if my System could aid him to think of his watch and where he had put it. "Infallibly," I replied, "if there is anything you can mention which you are *certain* to think of when you get up, such as boots, trousers, hat, &c." "There is one thing," he rejoined, "I am more certain to think of than any article of clothing. I always think what a shame it is I have to get up." "Well, you are sure to think of the words 'get up;' that then is your *Best Known*. Correlate the word 'watch' to it. . thus: 'GET UP'—Spring up—Watch Spring—WATCH." After a tour of four months he reported he had always thought of his watch the moment he awoke.

SPEAKING WITHOUT WRITTEN OR PRINTED NOTES.

After the clergyman has decided on his text, or the speaker on any subject he has selected for his special topic, the next step is to *think it out*—to make his plan—his mode of development of his ideas—their order and sequence, illustrations, &c. All this will constitute an outline—the SKELETON OF THE DISCOURSE. This should usually be *committed to paper*. If he possesses the requisite command of language to enable him to express his views, all he now requires to do is to *thoroughly memorise* this Skeleton.

When this is done, the orator will have no occasion to have any notes *before him to refer to*, and thereby to remind his audience that he is merely rehearsing fervour a week or more old; but, having the exact order of ideas in his memory, he can proceed to speak on each *successive* topic until he has exhausted all the points and illustrations that he had intended to use.

A young clergyman is very apt to imagine that he will correlate together 20 to 100 propositions in every discourse —a theoretical conjecture never verified in fact. In *practice*, he will find that he will very rarely correlate more than ten propositions together, and he will correlate sub-propositions, citations, or illustrations to the respective propositions

to which they belong. Instead of correlations, *he may unite his propositions together by analysis.* Each person will manage this matter as he finds most convenient to himself; or, if he desires to literally memorise his discourses, he can do so in the manner pointed out in learning sentences, or by two or three careful perusals. But, by one who speaks without notes is generally understood one who has only memorised his leading ideas, and it is always a judicious practice for a beginner to rehearse his leading topics and their amplifications in private, *that he may test his memory*, and then *become familiar* with a procedure *in private* in order to be sure to be *perfect in it before the public.* This private discipline is all the more necessary in the early stages of extempore speaking—if the speaker is at all troubled by nervous anxieties or mind-wandering.

Suppose a teacher of the Art of Expression has studied Moses True Brown's [see his Synthetic Philosophy of Expression] reduction of Delsarte's Nine Laws of Gesture to Brown's One Law of Correspondence—and suppose this teacher wishes to explain to his class, or to an audience, how Mr. Brown proceeded. If he desires to do this without notes, he must memorise the order of those Nine Laws; they are abstractly stated and difficult to correlate, but it can be done. The Laws are as follows:—

Motion,
Velocity,
Direction or Extension,
Re-action,
Form,
Personality,
Opposition of Agents,
Priority, or Sequence,
Rhythm.

The teacher must correlate these heads or topics of his discourse together, and so memorise his correlations that he can recall the series in the exact order. Perhaps he may proceed thus:

MOTION.
[Rate of motion.]
VELOCITY.
[Relation of motion to time and *space*—.]

DIRECTION or Extension.
[Direction reversed.]
RE-ACTION.
[Mould of Action.]
FORM.
[Form of the Human.]
PERSONALITY.
[Its extremes.]
OPPOSITION OF AGENTS.
[First opponent.]
PRIORITY or Sequence.
[Periodicity of Sequence.]
RHYTHM.

Knowing these Nine Laws in the above *order*, he can discuss them one after the other. When he has finished his explanation of the reduction of the three Forms of Motion [Concentric, Poise, and Eccentric] to the Law of Correspondence, he can proceed to the consideration of the sub-topics under Velocity, and so on. When he has fixed the other of his topics in mind, he has a mental chart or map to guide him in his exposition, and similarly in other cases.

EXERCISE.

Learn some of the "Antidotes," and at least two of the following series. Do *not* learn the extracts from Quain's Anatomy unless you understand what is meant, or are a medical student.

DISTANCES OF PLANETS FROM THE SUN.

MERCURY—36,000,000 [*M*ercury *Sh*ines].
VENUS—67,000,000 [*Sh*e's a *G*oddess].
EARTH—93,000,000 [*P*lanetary *M*other].
MARS—141,000,000 [*Th*is Wo*r*ld's Ou*t*sider].
JUPITER—482,000,000 [*R*ather *F*lattened E*n*ds, or, A *R*oundish *F*orm U*n*equalled].
SATURN—885,000,000 [*F*loods o*f* *L*ight].
URANUS—1,780,000,000 [*D*isturbances *C*aused *F*ruitful *S*earchings].
NEPTUNE—2,789,000,000 [*N*eptune *C*onstitutes a *F*rontier *B*oundary].

1. How many planets are here mentioned? Make your own correlations between each.

EXTRACTS FROM QUAIN'S ANATOMY.

To be studied by none but Medical Students.

"The Branches of the External Carotid Artery are eight in number, *viz.*, three directed forwards, the superior thyroid, the lingual, and the facial; two directed backwards, the occipital and the posterior auricular; and three extending upwards, the ascending pharyngeal branch, together with the temporal and internal maxillary, the two terminal branches into which the artery divides."

Dissect, or study a model or diagram of these branch arteries, and then the facts are easily learned by means of Correlations:—

CAROTID.....rotten....ruinous...IVY (eight branches)
....growth....advance....go forwards.....
FORWARDS.....lead forwards....conduct....ductless....THYROID
....spheroid...earth....many languages....LINGUAL
....tongue....mouth....face.....FACIAL
....front....back.....
BACKWARDS....back of head....occiput.....OCCIPITAL
....occult....secret....confession.....AURICULAR
....ocular ...eye....high up.....
UPWARDS.....ascending.....ASCENDING PHARYNGEAL
....congeal....frozen Thames.....
....temporary.....TEMPORAL
....pour out shot....Maxim gun
or "be temperate"... maxim.....MAXILLARY

To memorise the attachments of muscles, first of all familiarise yourself by diligent dissection with the aspects of the muscles and the actual facts of their attachments. It is possible to memorise their origins and insertions by my System, merely from their written descriptions; but this is not *learning*. It is a vicious system of cramming, which can do no good. When you have thoroughly familiarised yourself with the actual facts proceed to fix these

1. Are all students required to learn extracts from Quain's Anatomy? 2. How many branches are there of the External Carotid Artery? 3. Describe them. 4. Is it an advantage in studying Anatomy to dissect or study a model? 5. How are the facts, then, easily learned? 6. Make original correlations for this Extract. 7. Do you use any unfamiliar words in your correlations? 8. How do you memorise the attachments of muscles? 9. Is it possible to memorise their origins and insertions by my System? 10. Is this *learning*? 11. What is it then?

facts in your memory by my System. In dealing with facts of such complexity as the origin and insertion of muscles, it may be needful to have free recourse to the assistance of homophones, &c. In the whole of anatomy there is no task so difficult as that of learning the precise attachments of the muscles of the back. Few students master these attachments thoroughly, and those who do, fail to retain them long.

By the System it is easy to learn facts of Anatomy. But the System is no substitute for *dissection and experiment.* You can get a COMPREHENSION of anatomical facts only by *actual experience*, and to attempt to require an *understanding* of them from books is to substitute a knowledge of words for a knowledge of things.

The following will indicate one way in which you may proceed in memorising the attachments of the muscles of the back :

(1) First make a homophone of the name of the muscle.

(2) Indicate each attachment of the muscle by two words.

The initial letter of the first word should indicate the part of bone to which the muscle is attached, *e.g.*, Sp = spinous process, T = transverse process, R = rib, &c. The second word should indicate by its consonants the *numbers* of the bones to which the attachment is made.

(3) Correlate the homophone of the muscle to the first pair of words, and the first pair to the second pair. For example :

"The SPLENIUS COLLI is attached, inferiorly, to the spinous processes of the third, fourth, fifth, and sixth dorsal vertebræ, and superiorly to the transverse processes of the first two or three cervical vertebræ."

spleniuS COLLi (homophone) SCOLD.
SCOLD...cold...marble...SPENDID IMAGE...
gold statuette...chimney ornament...clock...'TIS TIME.

In the first pair of words the initial of Splendid shows

1. Do you need to use Homophones in this study? 2. What is the most difficult task in Anatomy? 3. Do students generally master this thoroughly? 4. What makes the learning of Anatomy easy? 5. Is my System a substitute for dissection? 6. How can you get a comprehension of anatomical facts?

that the attachment is to the Spinous processes, and the word Image indicates that the vertebræ implicated are the third to the sixth. The second pair show that the transverse processes, from the first to the third, are those into which the muscle is inserted.

"The SPLENIUS CAPITIS arises from the spines of the seventh cervical and two upper dorsal vertebræ and from the ligamentum nuchæ. It is inserted into the lower and back part of the mastoid process, and into the outer part of the superior curved line of the occipital bone."

spleniuS CAPitis (homophone) ESCAPE.
ESCAPE...flight...projectile...trajectory...conic section...
SPLIT CONE.
split...spliced...ligatured... .....LIGAMENTUM NUCHÆ.
new keel...ship...mast.....MASTOID.
masticate...eat...drink...sip .....OCCIPITAL.

POISONS AND ANTIDOTES.

Narcotic poisons are neutralized by vinegar :—NARCOTICS...torpor...strong wine...sour wine...*vinegar.*

Wine, brandy, coffee, and camphor may be used to rouse those who have taken laudanum or any other preparation of opium...OPIUM...opium eater...intemperate...*brandy* ...*wine*...beverage...*coffee*...cough...cold...camphorated spirit ...*camphor.*

Mucilage, camphor, and oil may be taken to neutralize cantharides :—CANTHARIDES... hair - grower...*oil*...smooth-running...ease...comfort...*camphor* ... fur cat...mew ... *mucilage.*

Ten drops of ammonia in a glass of sugared water sobers a tipsy man :—DRUNK...alcohol...volatile spirits...volatile...alkali...*ammonia*...to moan...*to sigh* (10)...pathos...sweet tears...*sugared water.*

ACONITE...night boat...sea sick...*emetics*... exhaustion... *stimulants*...hard drinking...spontaneous combustion... *animal charcoal.*

1. Are antidotes for Poisons easy to remember? 2. Should not all persons have a knowledge of the antidotes for the ordinary poisons? 3. What method have I given to obtain such knowledge? 4. What is the relation between "Narcotics" and "torpor"?

CHLORIDE OF LIME...bad smell...bad egg...*white of egg*... fowl...grain...*flour*...flour and water...milk fluid...*milk.*

Oil, milk (any fatty mucilaginous substance), may protect the coats of the stomach against oil of vitrol and other acrid poisons :—ACRID...curd...curdled milk...*milk*...butter ...melted butter...*oil.*

STRONG ACIDS [Sulphuric Acid (oil of vitriol), Nitric Acid, Hydrochloric Acid]...alkali...lemon kali...effervescing draught...citrate of magnesia...*Magnesia*...antacid...*Bicarbonate of Soda*...potash...potash soap...*soap suds*...emollient ...*Emollient Drinks.*

CARBOLIC ACID...liquid..oil...*sweet oil*...*castor oil*...aperient ...*Epsom Salts*...white...*white of egg.*

Prussic acid (Hydrocyanic Acid) is neutralized by alkalies and freshly precipitated oxide of iron :—PRUSSIC ACID ...tartaric acid...carbonate of soda...*alkali*...lie on the side... *oxide of iron*...steel file...rasp...*artificial respiration.* [HYDROCYANIC ACID...cyanotic...asphyxiated...no respiration... *Artificial respiration*...perspiration...hot...*cold effusion*...exposed to wet...rust...*fresh precipitated oxide of iron.*]

Soap and Sulphide of Potassium are antidotes against arsenic and other metallic poisons : METALLIC...lick...catlick...wash...*soap*...potash soap...potassium...*sulphide of potassium.*

TARTRATED ANTIMONY...tartar emetic...vomiting...irritating...*emollient drinks*...ladies drink...*strong tea*...bitter infusion...*tannic acid.*

NITRATE OF SILVER...silver sand...seashore...*sea water*... *common salt*...white...*white of egg*...fowls...barley...*barley water*...warm water...vomiting...*emetics.*

PERCHLORIDE OF MERCURY...quicksilver...white...*white of egg*...piecrust...*wheat flour*...flowers of sulphur...milk of sulphur...*milk.*

STRYCHNINE...nerve stimulant...nerve sedative...*Bromide of Potassium and Chloral Hydrate*...organic compound...

1. Can you discover more than one relation existing between "grain" and "flour"? 2. Why could we not use the single word "white," to connect "white of egg" to "flour"? 3. What is the relation between "liquid" and "oil"? 4. What two relations exist between "vomiting" and "irritating"? 5. What one, between "fowls" and "barley"? 6. Why? 7. What is the relation between "wheat flour" and "flowers of sulphur"?

heated organic compound...charcoal...*animal charcoal*... charcoal fumes...asphyxia...*artificial respiration*...perspiration...tea...*tannic acid*...acidity...dyspepsia...vomiting...*emetics*.

BELLADONNA...deadly nightshade...deadly sick...*emetic*... *mustard and water*...brandy and water...*stimulants*...hot... perspiration...*pilocarpine* [p. injected hypodermically causes profuse perspiration].

THE TWELVE PAIRS OF CRANIAL NERVES.

The following list is worked out for practice *much more fully* than a medical student would do if he were learning the list in his studies. The medical student would doubtless first objectively identify these nerves in dissection, and then use correlations to help him remember those which his natural memory could not carry. If not a medical student, my pupil may omit this and the previous examples from Quain's Anatomy.

THE TWELVE PAIRS OF CRANIAL NERVES.

CRANIAL NERVES...within the skull...wi*th*i*n* (12 pairs) ...withdrawal...draw oil...oil factory...OLFACTORY (1st pair) ...manufactory...smoke...*smell*...scent-bottle...glass...optical glass...OPTIC (2nd pair)...optician...eyeglass...*sight*...eyewitness...ocular demonstration...OCCULO MOTOR (3rd pair) ocular motions...*move the eye many ways*...tear in the eye... TROCHLEAR or PATHETIC (4th pair)...moving...*move the eye obliquely*...obtuse angle...triangle...TRIGEMINAL (5th pair)... gem...sparkling...*eye*...eyetooth...*jaw*...talk...*tongue* ... *taste*... good taste...good feeling...*feeling*...feelers...*motion*...ocean... sailors...absent from home...ABDUCENT (6th pair)...sent out

1. Between "perspiration" and "tea"? 2. Why so? 3. Explain the relation between "Belladonna" and "deadly nightshade." 4. What advice is here given the medical student? 5. Are you required to learn the twelve pairs of cranial nerves if you are not a medical student? 6. What do the words printed in italics indicate in this exercise? 7. Is it essential for the medical student to know these uses? 8. What word indicates the number of pairs of cranial nerves? 9. Through what consonant?

...see out...*moves the eye outwards*...face outwards...FACIAL (7th pair—motor to muscles of expression)...face...audience ...AUDITORY (8th pair, sensory for hearing and equilibration)...ear-ring...shiny...glossy...GLOSSO-PHARYNGEAL (9th pair, taste, swallow) .. congeal ... unfixed ... vague ... VAGUS (10th pair, pneumogastric)...gusty...blown back...backbone ...SPINAL ACCESSORY (11th pair, moves head) *and motor*... spines...sharp criticism...hypercritical...HYPOGLOSSAL (12th pair)...glossary...foreign tongue...*Tongue Muscles.*

PROTOPLASM.

Albumen, gluten, fibrin, syntonin, are closely allied substances known as proteids, and each is composed of carbon, hydrogen, oxygen and nitrogen.

PROTEIDS...Protector...commonwealth...for all...*albumen* ...all men...liars...fibs...*fibrin*...brindled...spotted...sin...*syntonin*...toe nails...hoofs...glue...*gluten.*

The foregoing exercises show that there are no facts of Science, &c., or in Daily Life, with which the System cannot cope—thus proving the greatest saver of Labour and Time if the pupil makes an application of it to his studies or business when once he has mastered the system.

BOOKS LEARNED IN ONE READING.

For the past ten years I have printed in my large prospectus a general view of my meaning. I will reproduce most of those views here, premising that I have never suggested that books are to be *learned by heart*, but only the *important*, *useful* portions of them—such as are new to the reader and which he may desire to retain.

I do not mean such books as Bradshaw's Guide, the London Post-Office Directory, or any other mere collection of names, addresses, statistics, &c., which one may have occasion to *consult*, but which it would be the mere bravado of Memory to learn by heart—though even this is possible enough to the master of my System. What is one's object in reading a book? Simply to retain the IDEAS in it that are NEW and USEFUL to him, as well as the NEW USES that are therein set forth of *old* and *familiar* ideas. If the reader is already partly acquainted with a book, there will be fewer new ideas in it than in one with which he is unacquainted. Now, what do I mean by Learning either of these books in one reading? I mean exactly what I say. All that you desire to remember shall be retained—all the leading or subordinate ideas, propositions, illustrations, facts, &c., &c.

There are only two ways of learning a book in this thorough manner:

(1) The *first* is the traditional method of learning by *rote* or endless repetition. A celebrated Coach in Anatomy says that no one can learn Anatomy until he has learned and *forgotten* it from three to seven times! In learning any book in this way, each sentence would be repeated over and over again, and then reviewed and *re*learnt and forgotten and learned again! And then at last the Pupil if he possesses a first-rate *cramming* memory might answer questions on it. In learning a book by *rote*, the number of times that each sentence and section is repeated, if actu-

ally written out and printed, would doubtless cover 5,000 to 50,000 or more pages !—and even then the Pupil passes his examination, if he really does "pass," partly by luck and partly by merit ; all his life he is constantly referring to it, and repeating it, and studying it, over and over again—showing really that he possesses little more than a Reference Memory in regard to it ! But let us be candid and confess the truth ; tens of thousands every year and during successive years try the various professions—law, medicine, divinity, or sciences, history, &c., &c., and utterly fail to "pass," even respectably, because they lack the extraordinary sensuous MEMORY necessary to acquire knowledge by *rote*.

It is only the exceptionally powerful natural memories that win at exacting examinations by *rote*—even then their learning is soon forgotten, unless it is *perpetually renewed*.

(2) The other mode of learning any book in the thorough manner I have indicated, whether it be a book in which the reader finds but *few* novel ideas or where they are *all new*, as in a scientific or technical work, is by my Method. In fact, I believe no one can learn any book so thoroughly by *rote*, even if he possesses a marvellous Natural Memory and if he peruse it ever so many times, as my Pupils can by my method in a single perusal. Let the reader note that my System has two important aspects—(1) It is a Device or Method of memorising or learning any facts whatever—prose, poetry, dates, data, formulæ and facts and principles of the sciences, &c., &c., &c., or anything whatsoever to be remembered. (2) There is another equally, if not *more* important aspect of it, namely, as a *Trainer or Strengthener of the Natural Memory* to any extent the pupil wishes to carry it. And the Natural Memory is so strengthened by the use of the System, that as a Device, the System is no longer required. You then remember from your new Memory-power without taking any pains to remember, and I am happy to add that the diligent student can derive the full benefit of the System as a Memory Trainer by learning the lessons in the way I point out.

Now, those who have thus derived the *full benefit* of the System, both as a Device for memorising and also as a Memory Trainer, *are the persons who can learn a book in one*

reading. "Reading" is used by Coaches in a technical sense; that is, synonymous with "thorough study." By a "single" or "one reading," I mean a single careful perusal *in conformity to the requirements of my System*. I do not mean that they can do this and doze during the process.

I now reproduce most of the plan always adopted in dealing with books whose contents, or the unfamiliar portions of them are to be mastered.

(1) You will not read the book with the *rapidity* with which some young ladies are said to devour the latest novel. They are often suspected of skipping pages at a time in order to discover the different stages of a plot, until a thoroughly aroused curiosity compels them to hasten at once to the last chapter to fall upon the denouement. This is not the style of perusal I contemplate.

(2) Nor is it to be supposed because you understand the method that it will therefore work itself. It has to be *applied* carefully and methodically *at least once*. This necessarily demands *time*, especially at first. Those who possess good health and good continuity, and a mastery of the System, accomplish the retention of a work in vastly less time than would be possible for them without the System, and the study is a pleasure instead of a task. On the other hand, those who are in the possession of poor health or of weak concentration, or who are overburdened with business anxieties, domestic cares or competitive worries, would very seldom, if ever, master any book in the ordinary way by *mere repetition*. These persons are extremely unfavourably situated to do justice to the System, and it costs them more time and trouble to master a book than the former class. A student admitted that he had carefully read a manual of English History completely through *sixteen* times, and then failed in the examination. To have obtained a lasting knowledge of this History by my method would probably have occupied him as long as he was formerly engaged in *two or three* of the sixteen fruitless perusals of it. There is, however, only one difference between this unfortunate student and the great majority of those who succeed in the examinations through *cramming*. He forgot all his historical knowledge *before* the examination—they usually for-

get theirs shortly *after*. In fact, a student or a man in advanced years who has really mastered any book so that he never has to refer to it again is a wonder. Take the memories of members of the learned professions—they are usually only REFERENCE memories. They know where to *find* the coveted knowledge, but they do not *possess* it or *retain* it in their minds. On the other hand, the student who masters a book by my method *really knows* the contents of it, and he is thus enabled to devote to other purposes *an enormous amount of time in the future* that other people have to spend in *perpetually refreshing* their superficial acquirements. Moreover, the average student who has carried out *all* my instructions can even *now* learn as much by my Method in any stated time as he could learn without my Method, and *with equal thoroughness* in many, many times as long a period! And if any one who has been pressed for time, or who has been in a panic about an impending examination, or who has been too much troubled with Discontinuity, too ill in general health, or too idle, to do more than superficially glance at my lessons —if any such person doubts his competency to accomplish as much as the diligent student of average ability has done, then let him turn back and really and truly MASTER my System [for he does not even KNOW what my System is until he has faithfully carried out to the very letter all my instructions, unless he has been a pupil of my oral lectures], and then and not before he will probably find that the achievements of the average diligent student of my System are quite within the easy range and scope of his own powers.

(3) In regard to the *subject matter* of the book, you do not care to occupy yourself with what you are *already familiar* with, and in most books there are a great many things that you already know. In many works, too, there is a great deal of padding-matter inserted to increase the bulk of the book, and possessing no permanent interest. The expositions and explanations which enable you to *understand* the new matter usually take up a large part of the book, and sometimes much the largest part of it, and are not to be memorised, but only understood with a sole view to appreciate the valuable and important parts

of the book—these expositions can be learned if desired—but they usually serve only a preliminary purpose. There is also very much *repetition*—the same matter in new dress, is reintroduced for sake of additional comments or applications. You do not trouble yourself with these iterations. The contents of a book which demand your attention are the IDEAS which are NEW to you, or the NEW USES made of familiar ideas.

Students who have not learned to exercise any independent thought often confess that in reading any book they are always in a maze. One thing seems just as important as another. To them the wheat looks exactly like the chaff. As an illustration that the power of Analysis is entirely wanting in many cases, I may mention that I once received a letter in which the writer had literally copied one of my column advertisements, and then added, "Please send me what relates to the above!" A modicum of mental training would have led him to say, "Kindly send me your Prospectus."

LEARN FIRST TO MAKE ABSTRACTS OF WHAT IS NEW TO YOU.

A great authority on education says: "Any work that deserves thorough study, deserves the labor of making an Abstract, *without which, indeed, the study is not thorough.*"

A work which deserves thorough study is obviously one full of IDEAS, new to the reader, such as the student must master.

If you are thinking of making an Abstract of a particular book, awaken the utmost interest in regard to it before you begin. Are you sure that it is worthy of thorough study? Is it the last or best work on the subject? And if you advance, note in a separate memorandum book your criticisms on the author's method and the soundness of his views. These criticisms will help keep up your interest in the Abstract, and at the close enable you to suggest modifications, additions, excisions, or a refutation.

Three things are required: (1) To learn **how** to abstract; (2) To **make** one, at least, such abstract; and (3) To **learn** it when made.

HOW TO MAKE ABSTRACTS.

Let the ambitious student make an Abstract of any chapter of John Stuart Mill's Logic, and then compare his work with the Analysis of this same chapter by the Rev. A. H. Killick (published by Longmans), and he will at once see the enormous difference between the essentials and the non-essentials—the difference between the subject of discussion and the *explanation* or *exposition* of it. The student's abstract, if printed, would extend over twenty to thirty pages. Mr. Killick's only occupies two to five pages. But do not reverse the process and read Mr. Killick's Analysis first and then make your Abstract. The latter, however, is *the easier*, *the usual*, and *the useless* method. Let the student continue this comparison till he attains very nearly the brevity and discrimination displayed by Mr. Killick. Or, if he prefers History, let him write a summary of any chapter of Green's "Short History of the English People," and then compare his digest with Mr. C. W. A. Tait's Analysis of the same chapter (now bound up with Green's History, as lately published in England). It would be a capital training for the student to abstract the whole of Green's work and compare his abridgment of each chapter with that of Mr. Tait. After considerable practice in this way in making Abstracts and *comparing his work with that of such Masterly Abstractors* as Dr. Killick and Mr. Tait, the student who needs this training is prepared to make abstracts of his own text-books.

Any other work of which an Abstract is published will serve the student as well as the above. There were formerly published Abstracts of several law books. And there may be other works whose abstracts are available to the ambitious student.

Abstracts would be very amusing if they did not indicate

an almost total failure of educational training in the matter of *thinking for one's self*. Recently a Pupil brought me a work on Physiology, written for general readers, and pointing to a paragraph in it that occupied nearly a whole page, exclaimed, "The only way I can make an abstract of that paragraph is to *learn it by heart!*" A glance at it showed me that I could express the gist and pith of it in the following sentence :—"The pulse beats 81 times per minute when you are standing, 71 times when sitting, and 66 times when lying down." After a re-perusal of the paragraph he remarked, "You are right. That is all one cares to remember in that long passage." To his request for me to memorise the Abstract, I replied by asking what is the "Best Known" in it. Why, "pulse," of course. It is merely occupied with the *number of times* the pulse beats per minute in different positions of the body. Now correlate (memorising your correlations as you proceed) "pulse" to "standing," and "standing" to a word expressing 81 (*fee*t) ; "sitting" to a word that translates 71 (*c*augh*t*) ; and "lying down" to a word that spells in figures 66 (*j*ud*g*e). The bodily positions being exhaustively enumerated need not be correlated together. Pulse . . beating . . fighting . . stand-up fight . . STANDING . . stand . . small table . . table legs . . FEET. SITTING . . rest . . arrest . . CAUGHT. LYING DOWN . . lies . . perjury . . trial . . JUDGE.

These efforts in abstracting will qualify the young student to distinguish the main ideas from the subordinate ones, and he will then know when reading a book what to attend to and what to reject. Try a short essay first, then a longer one ; and at last, when you are familiar with the method, attack any book, and you will cope with it successfully. Not much practice in this way will be required to enable you to know, from a glance at the *table of contents*, just what to assail and what to disregard. And in all your *first* attempts in reading a technical work, make out an Abstract of each chapter in writing, and then deal only with this Abstract. Whenever the Subject is not treated in a desultory manner, but with logical precision, you will soon be able to find Suggestive or Prompting Words in the Sequence of Ideas and in the successive Links in the Chain

of Thought that runs through the exposition. If there is no such Sequence of Ideas or Chain of Thought running through it, it may serve as an amusement, but is little likely to command serious study. *In a short time* you will be able, in the language of Dr. Johnson, "to tear out the heart of any book." Hazlitt said that Coleridge rarely read a book through, "but would plunge into the marrow of a new volume and feed on all the nutritious matter with surprising rapidity, grasping the thought of the author and following out his reasonings to consequences of which he never dreamt." Such a result is rarely attained even by the ablest of men—but it is the ultimate goal at which every student should aim—an aim in which he will be largely assisted by the ART OF ASSIMILATIVE MEMORY.

There are four methods of learning abstracts : one is by Synthesis ; the other is by the Analytic-Synthetic Method, the third is mostly by Assimilative Analysis, and the fourth method is by the memory developed and trained by the System, but which is not consciously used.

(1) It is the novelties of Fact, Opinion, Illustration, &c., set forth in your Abstract that you correlate together, thus : You correlate the Title of the First Chapter to the Title of the Book ; next, the Titles of the Chapters to each other ; and then you correlate, in each chapter, the first leading idea or proposition to the title of the chapter, the second leading idea to the first, &c., &c. In this way you will proceed until you have absorbed all the *new ideas*, *facts*, *statistics* or *illustrations*, or whatever you wish to retain. You can then test yourself on the work by calling to mind whatever you have thus cemented together. If this is well done you will never have to do it again.

(2) We have already seen how to apply the Analytic-Synthetic Method in learning by heart selections in Prose or Poetry, and same method can be used in memorising an Abstract of such parts of a book as are new to the reader. This method, too, once used in addition to what has been done by the pupil, will make a further resort to it unnecessary.

(3) And the same remark applies to the third method.

(4) The fourth method is the pupil's final method.

The foregoing exhaustive methods of dealing with a book are recommended to those only whose natural memories are not yet made powerfully retentive by the System as a Memory-TRAINER. If, however, a Pupil possesses a good natural memory and a mastery of the System as a Device for memorising, and he has also greatly added to the power of his Concentration as well as his memory by doing all the exercises, he *will not use my System, even in the reading of the first book, except now and then*—certainly *not* constantly, but *only occasionally.* Although not necessary in case of memories made strong by the System, yet I do most earnestly recommend the most gifted and highly endowed to deal with *one* book in the above thorough-going manner. As for instance, Herbert Spencer's little work on Education [four short essays]. Dr. Charles Mercier, who next to Herbert Spencer is the most original and clear sighted Psychologist in England, presents, in a work entitled "Sanity and Insanity," a scarcely equalled example of lucid exposition and logical development. Whichever one is selected it should be fairly and honestly handled by my method. The gain to Intellectual Comprehension from having carefully abstracted one book, and the gain to the memory from having made and memorised the Abstract, will produce results that will last through life, and make all subsequent acquisitions more easy and delightful, and make all further abstracts probably unnecessary.

How to learn a long series of Unconnected Facts in the Sciences or Events in History, Chapters in Books, or the Contents of Books.

1. It is useless for the pupil to attempt to learn the exercise here given unless he has carefully studied the Building, Ice, Presidential, and English Sovereign Series. The *meaning* of In., Ex., and Con. can be understood in application to the facts of life, the events of History and the principles and details of the Arts and Sciences, only by a complete mastery of all that precedes this exercise.

2. Let the pupil learn only *ten* facts, propositions or statements at each of the first few sittings, and then, as he

adds ten more, let him recite from memory all that he has previously learned of this exercise. The *cementing relations* of In., Ex., and Con., which bind the events together, must in each case be first found by the student himself, and afterwards, and not before, let him glance at my analysis which follows this series.

3. The lawyer, in selecting 100 or 1,000 events of the Victorian Era, would doubtless make a list interesting to lawyers, the physician would make one of interest mostly or mainly to doctors, and similarly with educators, statesmen, editors, &c., &c. But I have selected events with a view to find the most difficult cases to deal with and with no other view, and if the pupil masters these, all other work hereafter will be easy to him.

4. This method can be promptly used, provided the pupil does not attempt to engorge or cloy his mind by undertaking too much at a time at first. Practice will soon make longer exercises easy. Each of the following six Exercises is enough for any one session or sitting.

5. Between a pair of *words* it may be difficult sometimes to find either the relation of In., Ex., or Con.; but in the case of sentences, propositions or descriptions, it is always easy to find one or other of the cementing relations. Relations which to me are strong, may seem weak to some pupils. No two persons would find the same relation in some cases, but, however different the solutions may be, they must always verify In., Ex., or Con.

6. The Int. Analysis, the Analytic-Synthetic, or the mere Analytic method, will enable the pupil to memorise the statement or sentence which describes the fact whenever any aid is necessary.

7. This Method can be readily applied to events in ancient or modern times, or to an accumulation of facts in the sciences, &c.

8. If we were to express only the year the formula would in most cases be different. To indicate the month and the day of the month, a consistent phrase must be used.

One Hundred Events of the Victorian Era, learned by one careful Reading or Study.

FIRST EXERCISE.

1—The Victoria era begins	June 20, 1837
2—Abolition of death penalty for forgery and some other crimes	July 17, 1837
3—Question of Trades Unionism brought before the House of Commons by Mr. Wakley and Mr. Daniel O'Connell	Feb. 13, 1838
4—First steam voyage across the Atlantic Ocean *completed* in 15 days by the *Great Western*	June 17, 1838
5—International Copyright Act passed	July 31, 1838
6—Chartist Meetings proclaimed illegal	Dec. 12, 1838
7—Anti-corn Law League formed	Dec. 19, 1838
8—Penny Postage Act passed	Aug. 17, 1839
9—Marriage of Queen Victoria and Prince Albert at the Chapel Royal, St. James's, by the Archbishop of Canterbury	Feb. 10, 1840
10—Birth of Princess Royal	Nov. 21, 1840

SECOND EXERCISE.

11—Birth of Prince of Wales	Nov. 9, 1841
12—Earl of Munster's suicide	Mar. 20, 1842
13—Monster Chartist Petition, borne by 16 men and containing 3,317,702 names, denied a hearing before the bar of the House of Commons	May 2, 1842
14—Defeat of Boers at Natal by the British troops	May 26, 1842
15—Treaty with the United States of America on North-West Boundary, Slave Trade and Extradition	Aug. 9, 1842
16—Defeat of Ameers at Meanee by Sir Charles Napier. Loss 10,000	Jan. 16, 1843
17—Birth of Princess Maud Mary Alice	April 25, 1843
18—Arkwright's son leaves his heirs £8,000,000	May 24, 1843
19—Birth of Prince Alfred Ernest Albert, Duke of Edinburgh and of Saxe-Coburg-Gotha	Aug. 6, 1844
20—Imprisonment for debt under £20 abolished	Aug. 10, 1844

THIRD EXERCISE.

21—Maynooth College Endowment Bill passed by House of Lords by 131 majority	May 16, 1845
22—Faraday announces discovery tending to show that *light*, *heat*, and *electricity* are but different manifestations of one great universal principle	Nov. 5, 1845
23—Birth of Princess Helena	May 25, 1846

24—Opening of new Philosophical Institute at Edinburgh..... Nov. 4, 1846
25—Shakespeare's House, at Stratford-on-Avon, purchased by the Shakespeare Committee for £3,000..... Sept. 16, 1847
26—Commercial crisis : Bank of England rate raised to 9 per cent..... Oct. 31, 1847
27—Chloroform administered by Professor Simpson at Edinburgh..... Nov. 12, 1847
28—The French Revolution of..... Feb. 22, 1848
29—Birth of Princess Louise..... Mar. 18, 1848
30—Kossuth claims protection from England..... Sept. 20, 1849

FOURTH EXERCISE.

31—Treaty with United States in regard to the Nicaragua Canal..... April 19, 1850
32—Sir Robert Peel's fall from a horse, on Constitution Hill, June 29, resulted in his death..... July 2, 1850
33—A Farewell Benefit to William Macready, the tragedian, at Drury Lane Theatre..... Feb. 26, 1851
34—Opening of International Exhibition by Her Majesty, in Hyde Park..... May 1, 1851
35—Louis Napoleon's Coup d'état..... Dec. 2, 1851
36—Duke of Wellington's Death..... Sept. 14, 1852
37—Birth of Prince Leopold..... April 7, 1853
38—Lord Palmerston advises Presbytery of Edinburgh to first consult the laws of sanitation before ordering a fast on account of the Cholera..... Oct. 19, 1853
39—Rev. F. D. Maurice dismissed from King's College for opinion's sake..... Oct. 27, 1853
40—War declared by Russia against Turkey..... Nov. 1, 1853

FIFTH EXERCISE.

41—War declared by England, against Russia..... Mar. 22, 1854
42—Epochal Work—Spencer's Psychology..... 1855
43—Treaty of Peace between England, France, and Russia, at Paris..... Mar. 30, 1856
44—Bands play on Sunday afternoons in Kensington Gardens..... April 13, 1856
45—Birth of Princess Beatrice..... April 14, 1857
46—Capture of Delhi..... Sept. 20, 1857
47—First Sitting of the Court for Divorces : Sir Creswell Cresswell, Judge Ordinary..... Jan. 16, 1858
48—Statue of Sir Isaac Newton unveiled by Lord Brougham at Grantham..... Sept. 21, 1858
49—Darwin's "Origin of Species" published..... 1859
50—Death of Lord (Thomas Babington) Macaulay.... Dec. 28, 1859

SIXTH EXERCISE.

51—Thomas Hopley, schoolmaster, sentenced to 4 years' penal servitude for causing the death of R. C. Cancellor by excessive corporal punishment..... July 23, 1864
52—Lord Clarence advises Ironclads for the Navy..... Mar. 11, 1861
53—Recognition by English Government of the Southern Confederacy..... May 8, 1861
54—Death of Prince Consort of gastric fever..... Nov. 14, 1861
55—Marriage of Prince of Wales and Princess Alexandra of Denmark..... Mar. 10, 1863
56—Tercentenary of Shakespeare's birth..... April 23, 1864
57—Tercentenary of the death of Calvin..... May 27, 1864
58—Inauguration of a statue to Sir Wm. Jenner, at Boulogne..... Sept. 1, 1865
59—Albert Medal for those who in saving life endanger their own..... Mar. 7, 1866
60—Mr. Peabody thanked by H. M. the Queen for his munificent gifts to the poor of London..... Mar. 28, 1866
61—Government requires Electric Telegraph..... July 31, 1868
62—University of Edinburgh admits women to the study of medicine..... Oct. 27, 1869
63—Act for the abolition of imprisonment for debt comes into effect..... Jan. 1, 1870
64—Prof. Tyndall traces propagation of disease by *dust* and *germs* floating in the air..... Jan. 14, 1870
65—Prince of Wales attacked with typhoid fever..... Nov. 23, 1871
66—Geneva Convention awards the United States of America, on account of Alabama Claims, £3,000,000 against Great Britain..... Sept. 14, 1873
67—Miss Richards, of Stapleton, walked 1000 miles in 1000 consecutive hours..... June 29, 1874
68—Captain Boynton crosses English Channel (second attempt) in his swimming dress..... May 28, 1875
69—British Museum lighted by electricity..... Oct. 20, 1879
70—Tay Bridge disaster..... Dec. 28, 1879
71—Death of Mrs. Mary Ann Cross (George Eliot)... Nov. 22, 1880
72—International Medical Congress in London; 2000 doctors from all parts of the world..... Aug. 3, 1881
73—Greenwich Observatory changed mode of reckoning time; commencing at midnight as in the case of civil time..... Jan. 1, 1885
74—First complete copy of Revised Bible presented to H. M. The Queen..... May 15, 1885
75—Sixpenny Telegrams introduced..... Oct. 1, 1885
76—By Pope's special authority the Queen visits the Monastery of the Grande Chartreuse..... April 23, 1887
77—Queen's Jubilee; 50th Anniversary..... June 20, 1887
78—The "Times" Newspaper celebrates its 100th Anniversary..... Jan. 1, 1888

79—First of 10 victims of "Jack the Ripper," Whitechapel, London..... Aug. 29, 1888
80—Henry Irving, Miss Terry and Lyceum Co., play at Sandringham, before the Queen, Royal Family and Guests..... April 26, 1889
81—Lord Mayor of London, Cardinal Manning and Bishop of London, constitute a Board of Conciliation in the great Dock Strike..... Sept. 5, 1889
82—Sir E. Guinness gives £250,000 for the erection of dwellings for the poor of London and Dublin..... Nov. 19, 1889
83—Great Speech of Sir William Harcourt on Free Education in Scotland..... Aug. 1, 1890
84—Death of Cardinal Newman..... Aug. 11, 1890
85—Funeral of Charles Bradlaugh..... Feb. 3, 1891
86—Loss of s.s. "Utopia," off Gibraltar, 600 lives lost..... Mar. 17, 1891
87—International Postal Congress..... May 23, 1891
88—Meeting of Imperial Federation League..... June 19, 1891
89—Primrose League Demonstration at Hatfield..... July 18, 1891
90—Meeting in connection with University Extension of Education, held in Oxford..... Aug. 6, 1891
91—International Agricultural Congress reject nationalization of land..... Sept. 11, 1891
92—Mr. Lidderdale and the Baring Liquidation..... Sept. 17, 1891
93—Publication of Koch's new remedy for Tuberculosis..... Oct. 22, 1891
94—Centenary of Mozart's death observed in England. Dec. 5, 1891
95—Indian national congress opened..... Dec. 27, 1891
96—The Khedive of Egypt appointed a new Cabinet without consulting the British Government. The next day he dismissed it under British pressure..... Jan. 17, 1893
97—The Australian Joint Stock Bank failed for £13,000,000 sterling..... April 20, 1893
98—The House of Lords rejected the Home Rule Bill..... Sept. 8, 1893
99—Professor Tyndall died from an overdose of chloral administered in mistake by his wife..... Dec. 4, 1893
100—Lord Salisbury attacks Darwinianism in his address before the British Association..... Aug. 8, 1894

ANALYSIS OF ONE HUNDRED EVENTS OF THE VICTORIAN ERA.

1 and 2—Con. and In.—The Victorian Era began June 20, 1837, and an Act for the abolition of the death penalty for forgery, &c., was passed nearly a month later. Here is the relation of Sequence or Con. The main motive for enacting the law was

doubtless sympathy. Death appeared to be too cruel for the crime; hence the *sympathy* on the part of the Sovereign, the founder of the Era, and of the legislators brought the Act into existence. Here we have the relation of Simple Inclusion.

2 and 3—Ex.—Criminals try to live by their wits, without work. The trade unionists live by labour. The modes of livelihood of these two classes are opposed. Hence it is Ex.

3 and 4—In. and Ex.—Trades union people and navigators are laborers.—Here is In. But the former work mostly at home or in their own country, and the sailors are engaged beyond the boundaries of their native country.—Here is Ex. from difference of locality.

4 and 5—In.—The sailors on the Great Western worked beyond the limits of their native country, and an International Copy right Law extends its influence even into the area of foreign lands. In the view of the sphere of operation these two cases contain an element in common.—Hence it is In.

5 and 6—Ex.—The International Copyright Law was enacted after long and earnest agitation—but all legal.—The Chartist agitators had to be suppressed. Here are conditions opposed to each other.—It is Ex.

6 and 7—Ex.—The Chartist agitation was extreme, and was proclaimed illegal. The Anti-Corn Law League acted prudently and within the law. Here again are opposed conditions. It is Ex.

7 and 8—In.—The Anti-Corn Law League was organised to help give cheap food to the masses. The Penny Postage Act was enacted to help the poor man, to save expense. A similar aim prompted the supporters of both measures.—It is In.

8 and 9—Ex.—Favouring the masses by cheap postage calls attention to the majority or the great body of the people. The marriage of the highest dignitaries of the State directs attention to the most favoured or exalted personages in the country. The extremes of the community are brought into relation. It is Ex.

9 and 10—Con. and In.—Parents and child is a Sequence. Hence Con. and a child possessing the blood of his parents sustains the relation also of In. to them. Let the pupil pause here, and before his next session of study of these events, let him recite these ten backwards and forwards several times from memory.

10 and 11—In.—Brother and sister possessing in common the blood of their parents is a case of In.

11 and 12—Ex.—Here is a birth contrasted with a death.—It is Ex.

12 and 13—Ex.—Death on the one hand and on the other a widespread effort to bring into existence Acts of Parliament. Self-destruction contrasted with efforts at production.

13 and 14—In.—Here are two winners and two losers. The parties opposed to Chartists defeat the hearing of this proposed motion; and the British soldiers gain a victory over the Boers. Success in common makes a case of In. on the part of the victori-

ous parties. And then the Chartists lost their proposed hearing and the Boers were beaten. This is the second In.

14 and 15—Ex.—A resort to arms contrasted with a resort to diplomacy.

15 and 16—Ex.—A treaty between the two greatest nations of the earth, and loss of 10,000 men. A triumph of Peace and a triumph in War.

16 and 17—Ex.—The death of a multitude of soldiers and a birth in the highest family of the realm.

17 and 18—Ex. and In.—A birth and a death gives Ex. A *royal* birth with all the advantages it brings, and the advantage of the inheritance of great fortunes, makes a clear case of In.

18 and 19—Ex. and In.—Similar relations to those spoken of in the last paragraph.

19 and 20—Ex.—To the taxpayer the endowment of the Duke of Edinburgh might seem to be a burden imposed—and the abolition of imprisonment for debt below £20, would be looked upon as a burden removed. Here we have Ex.

As before suggested, let the pupil recite the foregoing ten events forwards and the reverse way several times from memory. And then let him similarly recite the entire twenty events.

20 and 21—In.—Favoring poor people—debtors and poor students—characterises both events.

21 and 22—In.—This college among other things prosecuted the study of Philosophy—"the complete unification of knowledge"—Farady *unified* three elements.

22 and 23—In.—Light, heat and electricity arise from latency to manifestation—a physical birth—here, too, is the birth of an organism.

23 and 24—In.—Beginning of two careers—one of an individual and the other of a body of persons.

24 and 25—Ex.—Object and aims different—one was a promotion of science—new science—highest science—the other was reverence for old literature—greatest of all literatures.

25 and 26—Ex.—Liberal outlay of money in art circles—great scarcity in business.

26 and 27—Ex.—Anguish and suffering unallayed—pain neutralized.

27 and 28—Ex.—Suppression of individual feeling—society's outburst.

28 and 29—In.—Explosion of seething elements—a new nation—royal birth.

29 and 30—In. and Ex.—Nation protects Royal child—a foreigner seeks same protection.

30 and 31—In. and Ex.—Treaty between State and individual—treaty between States.

31 and 32—Ex.—Canal transportation comparatively safe—horseback riding liable to accidents.

32 and 33—In.—Farewell to life—farewell to stage.

33 and 34—Ex.—Close of one kind of exhibition and opening of another.
34 and 35—Ex.—Peaceful industries triumph—usurpation by intrigue and blood.
35 and 36—Ex. and In.—Beginning of one career and close of another—a trampler on laws ; a respecter of them.
36 and 37—Ex.—Great General's death ; royal birth.
37 and 38—Ex.—Life and choleraic deaths feared.
38 and 39—In.—Rebuke of religious zeal—dismissal for opinion's sake.
39 and 40—In.—A cleric dismissed and a war declared—" Intolerance " in both cases.
40 and 41—In.—Two declarations of war.
41 and 42—Ex.—Ravages of war contrasted with intellectual triumphs of peace—brute force and advanced thinking.
42 and 43—Con.—Philosophy and peace—high thinking and the conditions on which it can be carried on—co-existence.
43 and 44—Con.—Peace and its celebrations, cause and effect.
44 and 45—In.—General rejoicing and rejoicing in royal family.
45 and 46—Ex.—Life and bloody deaths.
46 and 47—Ex.—Forcible seizure and legal separation, capture and discharge.
47 and 48—Ex.—Marriage failures and honoring Newton's successes.
48 and 49—Ex. and In.—Honoring old science—publishing new science.
49 and 50—Ex.—Beginning of scientific reputation—close of literary life.
50 and 51—In. and Ex.—Two deaths make In.—and one from natural causes and the other from violence, we have Ex.
51 and 52—Ex.—Violence externally applied kills the boy—but ships shielded from violence by its ironclad covering. It is Ex.
52 and 53—In. and Con.—Interest in war and befriending a belligerent, coexistence of war improvement, and favouring a warlike people.
53 and 54—Ex.—Coming into existence (recognition) and death of a high personage.
54 and 55—Con. and Ex.—Father and son is Con.—death and marriage as the condition of life.
55 and 56—In.—Marriage festivities and celebration of Shakespeare's birth—both rejoicings.
56 and 57—In. and Ex.—Both tercentenaries, and one reckons from birth and the other from death.
57 and 58—In. and Ex.—Tercentenary ceremonies, and dedication of a statue to Sir William Jenner—one tried to save souls, the other to save life.
58 and 59—In.—A statue and a medal—honour in both cases.
59 and 60—In.—One tried to save life, the other alleviated its sufferings.
60 and 61—In.—Gifts to the poor in a lump—buying telegraph to cheapen cost of messages to the great mass of community.
61 and 62—In.—Extension of telegraphs, ultimately to the benefit of all—extension of medical education to women.

62 and 63—In.—Rights of women and of the poor—beneficence to poor and charity to women.
63 and 64—Con.—Common prisons abound in dust and germs—these latter are propagators of disease.
64 and 65—In. and Con.—Germs cause typhoid and other diseases—Prince of Wales attacked by typhoid.
65 and 66—Ex.—Typhoid tends to destroy ; awards build up.
66 and 67—In. and Ex.—Fast steamer Alabama, and fast woman walker, speed with injury—and innocent speed.
67 and 68—Ex.—Walking on land and safe swimming in water.
68 and 69—In.—Floating in water and electric lighting of museum—protection to life—and comfort to life.
69 and 70—Ex.—Lighted museum—and dark night at the Tay—light and safety—and darkness and death.
70 and 71—In.—Many deaths in Bridge disaster and one distinguished person dies.
71 and 72—Ex.—One person dies and medics strive to prevent death.
72 and 73—In. and Ex.—Medical improvement and improvement in reckoning time—doctors from abroad—and observatory stationary.
73 and 74—In.—Improved time reckoning—and revised and improved form of Bible.
74 and 75—In. and Ex.—Gift to highest personage and cheap telegrams for masses—favours to both.
75 and 76—In. and Ex.—Head of English nation and head of Catholic church—favour to the Queen and favour to the people.
76 and 77—In.—One concession to Queen—and people's jubilee on account of Queen—good will in both cases.
77 and 78—In. and Ex.—Queen's jubilee and Times' jubilee, sovereign and subjects.
78 and 79—Con.—Universal reporter of good and bad things—worst possible murder.
79 and 80—Ex.—Horror and amusement.
80 and 81—Ex.—Players for Royalty and great arbitrators for labouring men.
81 and 82—In.—Strike of poor labourers, and houses for the poor.
82 and 83—In. and Ex.—Gifts to poor and education for them—physical benefits and mental benefit.
83 and 84—In. and Ex.—Intellectual education and spiritual education—living scholars and death of a great teacher.
84 and 85—In. and Ex.—Two deaths—and opposite beliefs—In. as to death and Ex. as to opinions.
85 and 86—In.—Death of one man—and death of six hundred—In.
86 and 87—Ex.—A dead multitude and a living congress.
87 and 88—In.—Two congresses.
88 and 89—In.—Imperialism—and party self-assertion.
89 and 90—In.—Political agitation—educational agitation.
90 and 91—Ex.—Extension of education—refusal to extend Government sway over land.
91 and 92—In.—Land not lost individuals—and bank saved.

92 and 93—In. and Ex.—Saving a bank and effort to save life—bank saved—but consumptives lost.
93 and 94—In. and Ex.—Rejoicing over supposed antidote to consumptive deaths—and music jubilee over death of Mozart.
94 and 95—Ex.—Death and birth of congress.
95 and 96—Ex.—A congress meets and a cabinet dissolves.
96 and 97—In.—A cabinet failed and a bank failed.
97 and 98—In.—Bank failure and Home Rule bill defeated.
98 and 99—In. and Ex.—Bill killed intentionally—a man killed accidentally.
99 and 100—In. and Ex.—Fatal attack of poison—unsuccessful attack on Darwinianism.

As to the dates of the 100 events, they will cause no difficulty. The pupil should look upon my formulas as models merely, and make his own whenever possible. In all the events belonging to this century, we have only to deal with the last two figures—(3) *M*odel (7) *Q*ueen gives the date of (18)37. The rule in regard to the month and the day of the month is very easily applied. A separate word for each figure except for the three months [October, November and December] where there are two figures in the one word that expresses the number of the month, as *t*ies, *d*ues, *t'is*, *th*us, *th*is, *th*ose express October, the tenth month; *th*at, *d*id, *d*ied, *d*ot, *d*ate, *th*ought, &c., &c., indicate November, the eleventh month; and *th*en, *th*in, *t*one, *t*une, a*t*tain, &c., &c., mean December, the twelfth month. A *M*odel *Q*ueen *J*ust i*n* *s*eason—Just in its "J" means the sixth month, or *J*une, and "n" in "i*n*" and "s" in *s*eason means a cypher—or 20—the translation of the phrase is (18)37—June—20th day—(2) A*m*endi*ng* a *c*ode *g*ives *t*rue *c*aution = (18)37—July—17th—(3) *M*aking *f*riends i*n*side *th*e *m*agnates = (18)38—February 13—(4) A*m*idship *V*oyager *sh*ows *d*ouble *g*eering = (18)38—June—17—(5) *M*utual *F*airness *g*ives *m*ultiplied *d*issemination = (18)38—July—31—(6) *M*eetings *f*orbidden *t*one *d*own *n*oise = (18)38—Dec.—12—(7) *M*eal a *f*avorite *th*en *t*ook *p*recedence = (18)38—December—19—(8) A *m*issive *p*enny *f*avors *th*e *c*ommonality = (18)39—August—17—(9) A *R*oyal *C*ementing i*n* *th*e *s*anctuary = (18)40—February—10th—(10) A *R*oyal *S*pinster [or *c*elebrity] *d*id i*n*vite *d*estiny = (18)40—November—21—(11) *R*oyal E*d*ward *d*id a*pp*ear = (18)41—Nov.—9th—(12) Ea*r*l's u*n*doing *m*anifested i*n*sane *s*ui-

cide = (18)42—March—20th—(13) *R*egistered *n*ames wi*l*l e*n*thuse = (18)42—May—2—(14) *R*epressing *N*atalites *l*eft *n*o *ch*ange = (18)42—May—26—(15) *R*ebinding *N*ations *f*avored *p*atriotism = (18)42—August—9—(16) *R*educing A*m*eers *t*ook *d*etermined *sh*ooting = (18)43—January—16—(17) *R*oyal *M*ary *r*ightly *n*amed A*l*ice = (18)43—April—25—(18) A*r*kwright's *m*illions wi*l*l e*n*rich hei*r*s = (18)43—May—24—(19) *R*oyal E*r*nest; a *f*avored *ch*ild = (18)44—August—6—(20) *R*eleasing a*r*rears *f*avored *d*ebtor's *s*entences = (18)44—August—10—(21) *R*eligious I*l*liberalities wi*l*l *d*estroy *ch*arity = (18)45—May—16—(22) A *r*eal *l*ikeness *th*at *l*inks = (18)45—Nov.—5—(23) A *r*oyal *ch*ild—He*l*ena—*n*ow *l*aughs = (18)46—May—25—(24) *R*eading wh*ich d*i*d r*ationalize = (18)46—Nov.—4—(25) A hoa*r*y *c*ottage *b*ought *t*oo *ch*eap = (18)47—Sept.—16—(26) A *r*ate *c*ausing *th*o*s*e *m*erchants *d*istress = (18)47—Oct.—31—(27) *R*elieving *ch*loroform *th*a*t d*rugs *n*erves = (18)47—Nov.—12—(28) *R*evolutionizing *F*renchmen i*n*dicated a *n*ew *n*ation = (18)48—Feb.—22—(29) A *r*oyal *f*airy *m*aiden *d*evelops *f*ancy—(she is an artist) = (18)48—March—18—(30) O*r*atorical *p*rayers *p*rocure *n*ational *s*ecurity = (18)49—Sept.—20—(31) A *l*awful *s*cheme a*r*ouses *t*opmost *p*atronage = (18)50—April—19—(32) A *l*uckless *s*tumble *k*illed a *n*obleman = (18)50—July—2—(33) Wi*l*liam's wi*th*drawal e*n*ded *n*umerous *ch*arms = (18)51—Feb.—26—(34) *V*ictoria we*l*comes *th*e Ha*l*l *t*o-day = (1)851—May—1—(35) *L*ouis' au*d*acity *th*en a*n*nounced = (18)51—Dec.—2—(36) We*l*lington's e*n*d *b*rought *d*ue *r*ecognition = (18)52—Sept.—14—(37) *L*eopold *m*ildly *r*aises a *c*ry = (18)53—April—7—(38) A *l*ord's *m*essage *d*oe*s t*each a *P*resbytery = (18)53—Oct.—19—(39) *L*earned *M*aurice *t*eache*s u*nwelcome *c*reeds = (18)53—Oct.—27—(40) A *l*urid *m*anifesto *th*a*t th*reatened = (18)53—Nov.—1—(41) A *L*awful *R*uler *m*enaces *n*ew a*n*tagonisms = (18)54—March—22—(42) No month or day of month being given, we will express three figures thus: E*v*olution's *l*aws i*l*lustrated = (1)855—(43) A*l*liances *j*oined *m*ean *m*anifest *s*ecurity = (18)56—March—30—(44) *L*isteners *ch*armed a*r*ound *th*e *m*usic = (18)56—April—13—(45) A *l*ucky *g*irl he*r*e a*t*tains *r*oyalty = (18)57—April—14—(46) A *l*awless *c*onspiracy *b*eaten i*n S*eptember = (18)57—Sept.—20—(47) *L*oosen-

ing *f*amilies *d*estroys *th*e *ch*ildren = (18)58—January—16—(48) A *L*ifeless *f*igure *p*ictures *N*ewton's *i*dentity = (18)58—Sept.—21—(49) No month or day being given, we may express the complete date: *D*arwinianism *f*ormulates *l*egitimate *b*iology = 1859—(50) *L*ifeless *B*abington *th*en *e*ntered a *v*ault = (18)59—Dec.—28—(51) A *sh*ameless *s*chool master's *c*ruelty *n*ow *m*urders, or a *s*chool master's *s*entence *c*auses *n*o *m*ercy = (18)60—July—23—(52) *Sh*ielding *o*ut*s*ides *m*ay *d*efy *a*ttack = (18)61—March—11—(53) *Ch*ivalry *d*elighted, wi*l*l *f*ight = (18)61—May—8—(54) *Sh*edding *t*ears *th*a*t* *t*ear hea*r*ts = (18)61—Nov.—14—or *V*ictoria *sh*ed *t*ears = (1)861—(55) A *j*oyful *m*arriage *m*ay ai*d* *s*overeignty = (18)63—March—10—(56) *Sh*akespeare's *r*eign *r*eturns o*n*ce *m*ore = (18)64—April—23—(57) A *j*ustifiable *r*evival wi*l*l *e*ndorse *C*alvin = (18)64—May—27—(58) *J*enner's *l*ikeness *p*leases *d*octors = (18)65—Sept.—1—(59) A *ch*artered *j*ewel *m*eans *c*apture = (18)66—March—7—(60) *G*enerosity's *ch*ampion *m*anifests *u*nusual *f*aith = (18)66—March—28—or *G*enerosity's *ch*ampion *m*arkedly *e*nthused *V*ictoria = (18)66—March—28—(61) *S*ure *f*orwarders *g*ain *m*ultitudinous *t*elegraphs = (18)68—July—31—(62) *Ch*arming *p*ractitioners *d*ose *u*neasy a*ch*es = (18)69—Oct.—27—(63) *C*reditors *s*cold *th*e *d*ebtors = (18)70—January—1—(64) *C*ontagion *s*preads *th*rough *th*e ai*r* = (18)70—January—14—(65) A *k*inglet's *t*yphoid *th*a*t* *e*nded *m*arvellously = (18)71—Nov.—23—(66) *G*reat (Britain) *i*mmediately *p*aid *th*e awa*r*d = (18)73—Sept.—14—(67) *C*ourageous *R*ichards *sh*owed *u*nusual *p*edestrianism = (18)74—June—29—(68) A *C*aptain's *l*ivery wi*l* *e*nsure *f*loating = (18)75—May—28—(69) A *c*urrent's *b*rightness *d*oes *e*nrich eyesight = (18)79—Oct.—20—(70) A *C*rippled *B*ridge *th*en *i*nstantly *f*ell = (18)79—Dec.—28—(71) A *f*emale *s*cribe *di*e*d* *i*n *N*ovember = (18)80—Nov.—22—(72) *F*oreign *d*octors *f*ormulate *m*edicine = (18)81—Aug.—3—(73) *F*ixing *l*imits *t*o *t*ime = (18)85—January—1—(74) *V*ictoria *l*earns Ho*l*y *T*estaments we*l* = (18)85—May—15—(75) Hal*v*ing e*l*ectrics *d*oubles *t*elegraphing = (18)85—Oct.—1—(76) *V*ictoria—*Q*ueen *r*eally *e*nters a *m*onastery = (18)87—April—23—(77) *V*ictorian *c*ongratulations *sh*ow *e*nlightened *s*ubjects = (18)87—June—20—(78) A *F*act *f*inder *d*rinks *t*oasts = (18)88—January—1—(79) *F*emale

*v*ictims o*f* u*n*natural *b*utchery = (18)88—August—29—(80) *V*ictoria a*p*plauds I*r*ving's *n*umerous *ch*armers = (18)89—April—26—(81) A *f*amous *B*oard *b*rought a*l*leviation = (18)89—Sept.—5—(82) *F*urnishing *b*uildings *d*i*d* *d*elight *p*aupers = (18)89—Nov.—19—(83) A *b*ig *s*peech *f*or e*d*ucation = (18)90—Aug.—1—(84) A *p*riest *s*urrenders a*f*ter *th*eological *t*oil = (18)90—Aug.—11—(85) *B*radlaugh *d*ies i*n* *m*ockery or *B*radlaugh's *d*eath *n*ow *m*ourned = (18)91—Feb.—3—(86) *P*erishing "U*t*opia" *m*eans a wa*t*ery *g*rave = (18)91—March—17—(87) *P*ostal *d*elegates wi*l* i*n*augurate *m*ethods = (18)91—May—23—(88) *B*ritish *d*omination *g*enerates *t*rue *p*atriotism = (18)91—June—19—(89) *P*rimrose *d*emonstration *g*ave Ha*t*field *f*lattery = (18)91—July—18—(90) *P*ushing e*d*ucation *f*or *ch*ildren = (18)91—Aug.—6—(91) *P*ublic *t*itles *p*ublicly *th*rown *d*own = (18)91—Sept.—11—(92) *B*aring's *d*ues *p*aid *th*e *c*reditors = (18)91—Sept.—17—(93) *P*ublishing *t*uberculosis *d*oe*s* i*n*vite i*n*vestigation = (18)91—Oct.—22—(94) *B*ooming *t*unes *th*e*n* *l*uxuriated = (18)91—Dec.—5—(95) O*p*ening *d*ays *th*i*n* I*n*dian *C*ongress = (18)91—Dec.—27—(96) A *B*ritish *m*inistry *d*etermine *th*e *K*hedive = (18)93—January—17—(97) *B*ank *m*ismanagement *r*uins *n*umerous *s*ubscribers = (18)93—April—20—(98) A *B*ill *m*ade *P*eers a*f*raid = (18)93—Sept.—8—(99) A *P*rofessor's "*M*rs." *th*e*n* e*rr*ed = (18)93—Dec.—4—, or giving the year alone we say: *T*yndall's Wi*f*e *b*ecame a *m*ind-wanderer or *T*yndall's Wi*f*e *p*oisoned hi*m* = 1893—(100) *D*arwinianism *f*avors *b*iological *r*idicule = 1894—, or *B*iological *r*esearches *f*avors *f*ault-finding = (18)94—August—8.

A CONCLUDING REMARK.

If the pupil has painstakingly reviewed this entire work, let him for the next three months, whenever he wishes to fix anything in mind, not apply the methods of the system to it, but concentrate his thoughts upon it with the utmost intensity so that his improved power of assimilation will seize upon it with an unreleasing grasp, and, then, when the three months period has passed, he will find that he has consolidated the Habit of Attention and Memory.

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